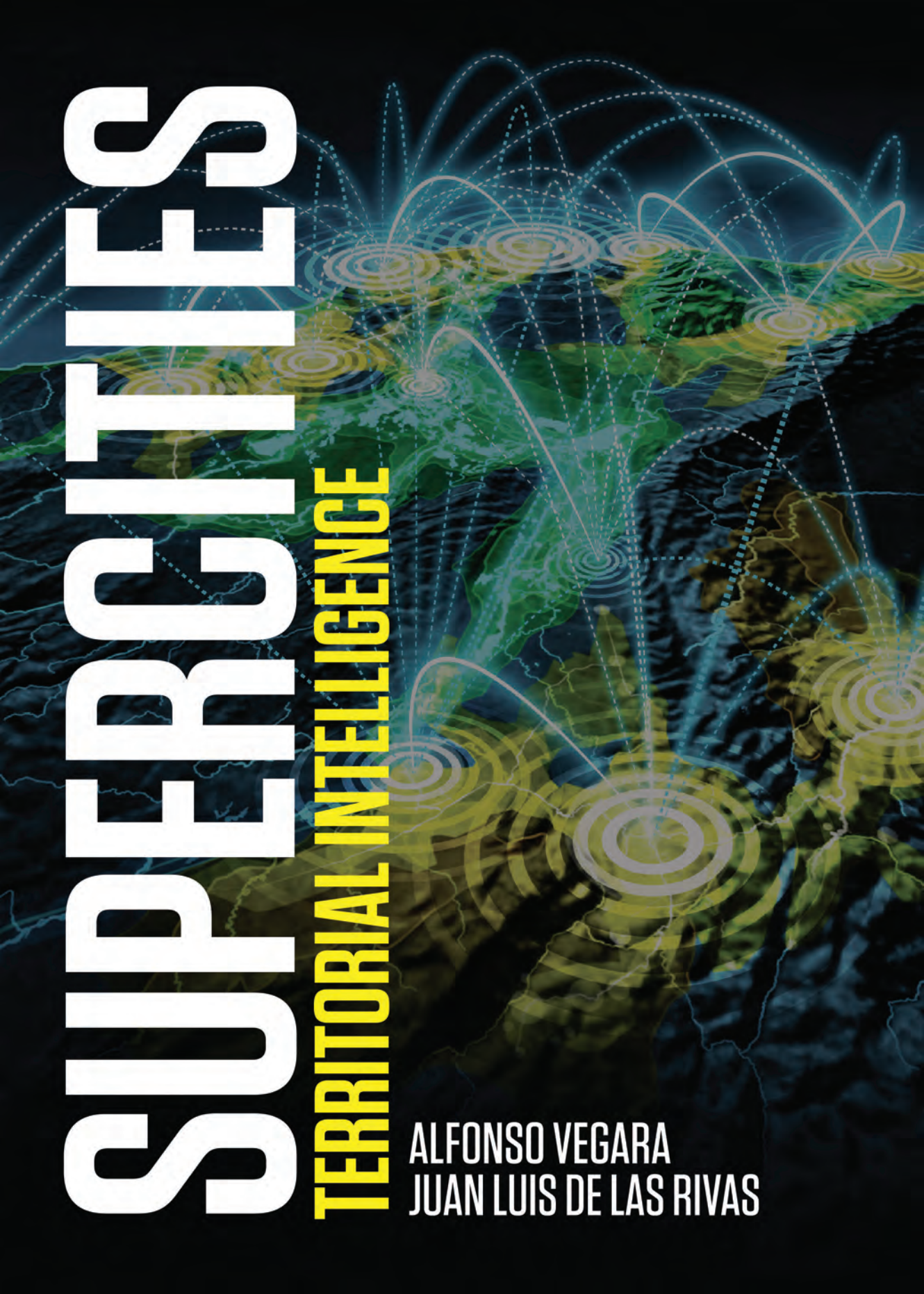
# SUPERCITIES

## TERRITORIAL INTELLIGENCE



ALFONSO VEGARA
JUAN LUIS DE LAS RIVAS



## SUPERCITIES

are those places that have been capable to discover what we have called in this book as "The Intelligence of the Territory". They are the nodes of innovation and creativity of our planet. From the smallest rural settlement, by way of middle-sized towns and cities and metropolitan areas large and small, to the most complex urban mega-region we can imagine, each city and each territory can design an intelligent project for the future and implement effective actions to achieve relevance in this new global scenario of competition and cooperation, and of vital commitments to sustainability, to social integration and to the eradication of poverty. A new generation of Supercities is emerging as part of the solution to the great challenges humanity is facing.

The Supercities transcend traditional administrative boundaries as they visualize their territorial models of the future and define their strategies of wealth generation, social cohesion and environmental sustainability. They are skilled at cooperating with the different tiers of the administration and at establishing dialogues between the public sector and the private sector. They are aware of the importance of civil society in the transformation of the territory. They are places of synergy and confluence around a vision and creative leadership. The SuperCities are becoming the nodes of social and economic activation, in places whose special magnetism serves to attract talent and innovative initiatives. They are the magical places where the intelligence of the territory is expressed in all its plenitude.

We are living through an unprecedented digital revolution at the confluence of four megatrends, namely cloud computing, mobile devices, social networks and the application of artificial intelligence to Big Data. We have never had so much computing capacity, such ease of access to information or so many options for physical and digital communication, and this is changing the way people live, work, have fun, learn and relate. It is also changing politics, the economy, society and, of course, the cities, which now enjoy opportunities that did not even exist until quite recently. The SuperCities are able to activate digital technology to improve our quality of life and to assist the creation of innovative ecosystems, as well as achieving their objectives of internal integration and global connectivity. The SuperCities combine territory and technology and create an intelligent dialogue between the physical world and the digital space at the service of the community.

In this book about SuperCities and Territorial Intelligence we present some of the most innovative projects being developed in different parts of the world today: One North in Singapore, the Guggenheim Effect and Neighbourhood Hearts in Bilbao, the High Line in New York, the social urbanism of Medellin, Barcelona's 22@ district, Minato Mirai 21 in Yokoyama, Green Capital Copenhagen, the miracle of Suzhou, the ecotech utopia of Masdar City in Abu Dhabi, Guadalajara's Creative Digital City, the Activity Hubs in Sydney, the Mikrorayons of Moscow or Colombia's Diamante Caribe & Santanderes. The last chapter of the book sets out our proposal for Intelligent Territories, an aid to reflection that aims to help inspire the design and construction of the habitat of the future, which we regard as one of humanity's greatest challenges.

# SUPERCITIES

## TERRITORIAL INTELLIGENCE

FUNDACIONMETROPOLI

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# SUPERCITIES
## TERRITORIAL INTELLIGENCE

ALFONSO VEGARA
JUAN LUIS DE LAS RIVAS

# UN-HABITAT

UN-HABITAT IS THE COORDINATING AGENCY FOR HUMAN SETTLEMENT ACTIVITIES OF THE UNITED NATIONS SYSTEM. UN-HABITAT DEVELOP ITS ACTIVITIES IN COLLABORATION WITH DIFFERENT PARTNERS, INCLUDING LOCAL AUTHORITIES, PRIVATE SECTOR AND NON-GOVERNMENTAL ORGANIZATIONS. ITS OBJECTIVE IS THE IMPLEMENTATION OF THE SUSTAINABLE DEVELOPMENT GOALS (SDGS), IN PARTICULAR, GOAL 11 OF "MAKING CITIES AND HUMAN SETTLEMENTS INCLUSIVE, SAFE, RESILIENT AND SUSTAINABLE". UN-HABITAT IS AS WELL THE TASK MANAGER OF THE HUMAN SETTLEMENTS CHAPTER OF AGENDA 21 AND FOCAL POINT FOR THE MONITORING, EVALUATION AND IMPLEMENTATION OF THE NEW URBAN AGENDA ADOPTED DURING THE UNITED NATIONS CONFERENCE ON HOUSING AND SUSTAINABLE URBAN DEVELOPMENT (HABITAT III), IN QUITO, ECUADOR 2016.






# **SUPERCITIES** FOR HUMANITY

A NEW FOREWORD BY **MAIMUNAH MOHD SHARIF,**
UNDER-SECRETARY-GENERAL & EXECUTIVE DIRECTOR,
UNITED NATIONS HUMAN SETTLEMENTS PROGRAMME (UN-HABITAT)



It is one of our world's greatest paradoxes that while cities have long been the epicentre of opportunity and growth, they have also been the cause of our nations' greatest challenges – significantly affecting the wellbeing of humanity.

People have been drawn to cities for a millennium. In the last 70 years alone, populations have skyrocketed to over 10 million in megacities like New York and Tokyo. This growing concentration of people, businesses, and ideas in compact spaces brings with it substantial challenges. Overpopulation and mismanaged urban development could result in economic, social, and environmental effects that threaten our collective welfare.

Today, we see the manifestation of these urban challenges in the exponential growth of informal housing in Mumbai, traffic congestion in Bogota, lack of affordable housing in Hong Kong, and urban sprawl in Detroit. In George Town, Malaysia, accelerated urban development is contributing to rising temperatures and increased flooding, which will be made worse by climate change. These issues are not unique. They are occurring in a variety of ways around the globe. Nonetheless, the

New Urban Agenda provides us with a key to meet the challenges of 21st Century urbanisation. If we plan well, we stand to make phenomenal strides in education, healthcare, governance, scientific progress, arts and culture, the eradication of poverty, and overall global wellbeing. Innovation and alternative perspectives are urgently required to turn cities around and create better living circumstances, as two-thirds of humanity will be living in cities by 2050.

Supercities: Territorial Intelligence offers inspiration for precisely this purpose. Particularly relevant to the New Urban Agenda (NUA) and Sustainable Development Goal (SDG) #11 to 'make cities and human settlements inclusive, safe, resilient, and sustainable', this book can help cities in their search for innovative solutions to the most chronic urban issues.

Authors Alfonso Vegara and Juan Luis De Las Rivas provide a fascinating exploration into the evolution of urban planning, from the conventional, functionalist methods of the past to today's more strategic approaches. With cutting insights illustrated by numerous case studies, they advocate the need for planning to look beyond the isolated city and adopt a more macro-lens to understand it in the context of other cities, peripheries, rural areas – and last but not least – territories.

It is crucial to recognise that the SDGs cannot be realised without changing how territories and urban areas are developing. In addition to improving and integrating urban territorial planning, achieving the NUA requires new rules and regulations that correspond to municipal financing frameworks.

The concepts of 'Supercities' and 'Territorial Diamonds', which are central to this book, will influence cities of the future. Intelligent Territories, as suggested by the authors, will create opportunities for the reflection and inspiration of a better humanity. Promoting greater inclusivity, Vegara and De Las Rivas detail the need for city managers to foster environments that enable better public spaces and community engagement. Community participation in urban governance – a welcome development – needs to be more strongly integrated into the early stages of the design process. To accomplish this would be a triumph of the NUA, which calls for more inclusive and equitable cities for all.

It is also encouraging to see this territorial approach being spearheaded in Malaysia by Think City, the urban rejuvenation organisation and co-publisher of this book. Their efforts to establish the Malacca Straits Diagonal and the Perak Diamond reflect an exciting shift in the urban governance paradigm, opening up amazing opportunities for connectivity, centralisation, communication, and cohesiveness.

In the long run, it is our hope that Supercities will encourage policymakers, planners, and professionals to put people at the heart of their decisions. We must leave a legacy of liveable and loveable cities for the next generation, safeguarding their future through thoughtful design and careful planning. As Vegara and De Las Rivas caution, we cannot only look to the past for guidance: we must also project into the future to craft dynamic solutions that will stand the test of time. Let us work together to ensure that no one and no place is left behind in our rapidly urbanising world.



# Ministry of Land Affairs an Spatial Planning / National Land Agency

## Indonesia



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Minister of Land Affairs and Spatial Planning
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**Eugene Cho Park**

Chief Executive Officer and Executive Director of Gallant

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## FUNDACIÓN METRÓPOLI

Fundación Metrópoli is an international institution founded in 1997 at the University of Pennsylvania, focused on creating and sharing innovation in the field of cities and territories, collaborating with cities, universities, and private institutions to accelerate economic development, competitiveness, quality of life, and environmental sustainability in cities. Fundación Metrópoli develops its activities through different programmes, such as:

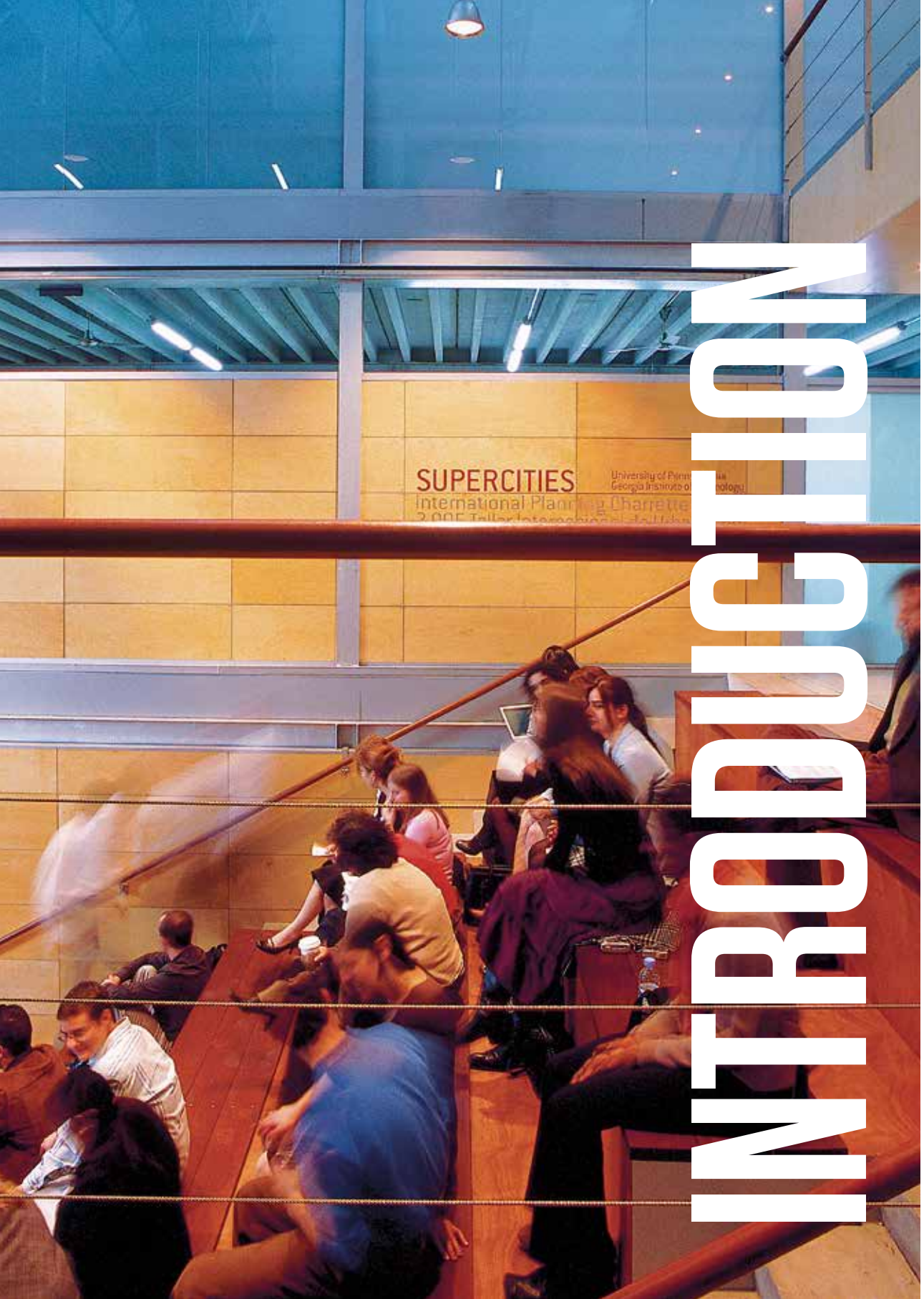
**CITIES Project.** A global research project, based on 20 cities from 5 separate continents, was developed in collaboration with a network of cities, universities and research centres. Those selected for the first phase of the project feature: Toronto, Boston, Philadelphia, Miami, Monterrey, Medellin, Curitiba, Montevideo, Santiago, Dublin, Bilbao, Windhoek, Cape Town, Dakar, Riyadh, Dubai, Hong Kong, Shanghai, Cebu, Singapore, and Sydney. These cities continue to be innovative, open to collaboration, and willing to share their experiences with others.

**Cities Lab**. The CITIES project evolved into a permanent research laboratory called Cities Lab, which expanded its scope to involve other cities such as Moscow, Mexico City, Casablanca, Yokohama, as well as new polycentric territories like Urban America 2050, the European Diagonal, the Malacca Straits Diagonal in Malaysia, and the Digital Diamond in Colombia. Cities Lab works with a holistic and multidisciplinary vision to incorporate a combination of art, technology, and design on an architectural and territorial scale.

**Urban Excellence Programme**. Features of the Urban Excellence Programme include The Mayors Institute, Fellowships on Advance Urban and Regional Studies, Art and City programmes, and Learning from Cities. The programme also releases publications, contributes to international events, fosters strategic partnerships with universities and cities, and uses strategic partnerships with enterprises to push innovation in the field where technology and territory intersect.

**Incubation of Urban Solutions**. This programme aims to facilitate the conversion of ideas into reality, to help cities and their territorial leaders implement projects that can leave a great impact. This is a collaborative effort integrating Fundación Metrópoli's knowledge and specialisation in creative design, with the expertise, technology, and financial capacity of their network of strategic partners.

**ALFONSO VEGARA**
Founder and Honorary President of Fundación Metrópoli




## SUPERCITIES: TERRITORIAL INTELLIGENCE

We live in a world of cities; ours is an increasingly urban planet. Cities are the new engines of the global economy with the potential to be the main actors leading the fight against climate change, inequality, and poverty. The ever-greater interdependence between cities goes hand in hand with increasing physical and digital connectivity. The size of our cities is also changing, with traditional administrative boundaries becoming increasingly irrelevant as to how we respond to the major objectives of development, balancing them against environmental sustainability. The past was once organised by periods of empires and nation-states, but as we now look to the future, we see a world shaped by Supercities.

Humankind has been historically conditioned by a series of crucial innovations that have changed the forms of living, the modes of producing, social relations, political organization, the territory, and the city. The invention of agriculture allowed man to transition from nomadic to sedentary, and led to the emergence of the first rural settlements and cities focused on trade. The invention of the steam engine ushered in the Industrial Revolution, which over the last two centuries has led to the progressive depopulation of the rural world, the rapid and widespread growth of cities, the rise of capital and labour as differentiating factors of production, and the birth of new social classes such as the bourgeoisie and the proletariat. Social differences were expressed very forcefully in the contrast between the countryside and the city, in the inequality within the industrial city, and in the segregation between the lavishly privileged neighbourhoods of the bourgeoisie and the deprived, unsanitary slum districts of the working class. Today, we are living in a digital revolution that is radically changing the forms of human settlement and our way of life.

Starting from the 21st century, we now are experiencing one of the swiftest and most profound transformations in the history of humanity. Technological innovation – notably the development of telecommunications and the Internet – is leading the growth of a new global economic order, one that is reinforced by the progressive dissolution of trade barriers, the formation of large economic blocs, and the expansion of markets.

This unprecedented digital revolution is characterized by the confluence of four megatrends, namely cloud computing, mobile devices, social networks, and the application of artificial intelligence to Big Data. We have never had so much computing capacity, such ease of access to information, or so many options for

physical and digital communication; this is shifting the way people live, work, have fun, learn, and relate to each other. It is also changing politics, the economy, society, and of course, cities, which now enjoy opportunities that did not even exist until quite recently.

The environment of globalization is composed of cities and city systems. Today, more than 50% of the world's population is urban and our cities are expanding at the fastest rate in human history. Coming up with a creative, human response to this challenge is one of the major issues of our time – one that will not be solved by the market, by economic liberalism, by alliances between the great trade blocs, or even by the politics of individual countries.

Globalization has brought significant advances, but it has also opened up a great fracture between the countries, cities, companies, and people that are integrated into this new economic order and those that are not. The differences between rich and poor countries are as deep as ever, and cities, especially large cities in developing countries, are experiencing the contradictory effects of globalization with particular intensity.

The urban landscape of globalization is not only that of shining skyscrapers, luxury residential neighbourhoods, private clubs, and latest-generation airports, it is also the landscape of poverty and want. In big cities, the business districts that drive the world economy and the most atrocious poverty exist side by side. We look around at a landscape marked by growing social segregation, the disturbing presence of violence and insecurity, new barriers in the urban space, in addition to private security systems in gated communities, representative buildings and shopping centres. Cities today face growing challenges and the need to seek new forms of social cohesion, better approaches to protect our ecosystems, and more effective responses to the challenges of climate change.

The global economy can provide unprecedented opportunities and has the potential to generate a great deal of wealth, but the key issue is whether we are able to ensure that this works to the benefit of all and not just for a small minority. The market creates a framework favourable to private enterprise and the development of economic activities, promoting the generation of wealth. However, the market alone is not able to prevent or mend the fracture of globalization. Effective responses to the challenge of creating an environment that will help overcome this fracture, can be found at the city and local neighbourhood scale, as well as in the fabric of people's day-to-day lives.

In this difficult and exciting time, we have written this book on Supercities and Territorial Intelligence as a contribution to the collective effort to design the cities of the future. Cities have an increasingly important place in our society and they function in a highly complex context, with undeniable challenges but also with a range of opportunities that did not previously exist.

Our cities, which almost always have significantly limited economic resources and with governments whose terms in office are relatively short and possess little political power, must address formidable challenges. Thus, we have chosen to refer to this generation of cities – whose leadership, creativity, and shared vision develop initiatives and projects of significant impact – as Supercities.

Supercities are managing to discover and mobilize what we have called in this book as Territorial Intelligence. They are our planet's nodes of innovation and creativity. From the smallest rural settlement – by way of middle-sized towns, cities, and metropolitan areas large and small, to the most complex urban mega-region we can imagine – each city and territory can design an intelligent project for the future and implement effective actions to gain relevance in this new global environment of competition and cooperation, as well as meet vital commitments to sustainability, social integration and to the eradication of poverty. A new generation of supercities is emerging as part of the solution to the great challenges facing humanity.

Supercities are led by increasingly relevant actors in our society: mayors with vision, professionals, entrepreneurs, artists, officials, academics, and committed citizens, who have shown that when they work together, they can do exceptional things in the service of the community. Supercities are managing to fashion for themselves an intelligent shared project for the future, while achieving quite astonishing results in the realms of economic development, social integration, and environmental sustainability.

Supercities have adapted to operate in an environment with a scope that exceeds the traditional municipal or metropolitan area and is more open to physical and digital interconnections. They are being developed on a new territorial and functional scale, which fosters synergies and strategic complementarities. Supercities are capable of articulating an intelligent dialogue with city systems and their environmental ecosystems, using it as a frame of reference to discover their key opportunities and potential growth trajectory.

A Supercity, irrespective of its size or current level of development, is a territory that strives for excellence and is committed to contributing, within its field of action, to the transformation of the world, while setting an example for other cities. It has succeeded in defining its own urban profile by fully understanding its own nature and identifying its components of excellence,

thereby using this knowledge to activate networks of cooperation and develop its own city project.

Supercities transcend traditional administrative boundaries; they are able to visualize the new territorial models of the future and define strategies of wealth generation, social cohesion, and environmental sustainability. They are skilled at cooperating with the different governmental tiers and establishing dialogues between the public and private sector, whilst also being aware of the importance of civil society in the territory's transformation. Their creative leadership and vision create places of synergy and confluence. Supercities are becoming nodes of social and economic activation, their special magnetism serving to attract talent and innovative initiatives. They are magical places where the intelligence of the territory is expressed in all its plenitude.

We know that what we are experiencing is not only an era of change, but also a change of era, marked by the uncertainty of challenges we must address. Several different crises are superimposed on one another, affecting the environment, the economy, social cohesion, and equality; crises that are different but at the same time deeply interconnected, with each one manifesting itself in a specific and profound way. The city is the paradigm space to engage these challenges, and also the supreme space of social and cultural creativity. Science, art, and technological innovation flourish more readily in the city, as do social change and advances that enable universal improvements to peoples' quality of life.

This book is aimed at everyone who works in a city and everyone who is interested in the future of the city. In the chapters that follow, we focus on three key aspects that have increasing importance in determining how how urban policies are directed in very different regions of the world:

The first of these aspects is the fight against climate change – the ecological dimension of the urban, the sensitive interactions with the natural environment, and the responsible use of natural resources. Many cities have introduced energy efficiency programmes, moving towards renewable energies, sustainable urban mobility, and a progressive reduction of polluting emissions. The fight against climate change is transforming the urban agenda in many innovative cities and helping sustainability in urban planning to evolve towards a better understanding of the urban metabolism, thereby making resilience a core objective, whilst factoring in the health of the urban system and its inhabitants.

The second key aspect is the need for a profound and progressive improvement in the governance of the territory. Governance has acquired a more strategic dimension in today's cities, thus innovating our cities' governing models and



their planning and management instruments. The reduction of inequality, one of the great challenges facing our society, is not solely dependent on macro-economic factors. Local government systems can facilitate advances in levels of democracy and social reform to ease the ongoing process of reconciling the actions of private enterprise and the common good. This is what various authors have called ethical or moral capitalism, an approach that, in our view, may prove surprisingly positive for our cities.

The third is the digital society, not only under the initiatives of the smart city or the use of digital technology to substantially improve the efficiency of urban services, but as an integral part of the development of the knowledge society. The extraordinary potential of education, science, and digital technology can stimulate local talent and create innovation ecosystems within cities.

In this book on Supercities and Territorial Intelligence, we have brought together, from a present-day perspective, the most relevant ideas and principal movements in urbanism, whose impact on the construction of our cities is of crucial significance. This spans the Athens Charter, which inspired the reconstruction of Europe after World War II and continues to inspire projects today, to the Strategic Plans. It also features other movements such as Participatory Urbanism, the City Region, the New Towns, Eco-urbanism, the Digital City, the Smart Cities movement and so on.

We also present some of the most innovative projects being developed in different parts of the world today, with their potential to inspire the design of cities in the future: One North in Singapore, the Guggenheim Effect and Neighbourhood Hearts in Bilbao, the High Line in New York, the social urbanism of Medellin, Barcelona's 22@ district, Minato Mirai 21 in Yokoyama, Green Capital Copenhagen, the miracle of Suzhou, the ecotech utopia of Masdar City in Abu Dhabi, Guadalajara's Creative Digital City, the Activity Hubs in Sydney, the Mikrorayons of Moscow and Colombia's Caribbean and Santanderes Diamond.

The last chapter of the book sets out our proposal for Intelligent Territories, aiming to aid a process of reflection to inspire the design and construction of the habitats of the future; which we regard as one of humanity's greatest challenges.

# 01 THE ORIGINS OF URBAN PLANNING

- # DO CITIES NEED A MASTER PLAN?
- # THE BIRTH OF URBAN PLANNING
- # ILDEFONS CERDÁ, A PIONEERING THEORY
- # BARCELONA'S EIXAMPLE, THE VIRTUES OF A GOOD PLAN
- # OTTO WAGNER AND THE TRANSFORMATION OF VIENNA
- # THE LIMITATIONS OF URBAN PLANNING
- # THE NEED FOR PLANNING: THE INVENTION OF THE FUTURE

The origins of modern urban planning date back to the second half of the 19th century, an exceptional period when major European cities had to confront the challenges of the industrial revolution. It was a stage of intense urbanisation and concentration of population in cities. These became centres for industrial production, social intensity, and intellectual activity.

It was during this unique period that Regulatory Planning Systems appeared in response to the challenges of urban growth, leading to the implementation of street alignments, building regulations, zoning, and more diverse urban planning techniques. At the dawn of modern urban planning, a prominent figure stood out: Ildefons Cerdà, author of the 'General Theory of Urbanisation'' and designer of Barcelona's Eixample plan (one of the most brilliant examples of urban planning). The seemingly rigid geometry of the Eixample and the intelligent design of the city block proved to be an example of flexibility and adaptability in urban design. The Barcelona 1992 Olympic Games projects, the 22@Barcelona initiative, the Universal Forum of Cultures, and recent initiatives regarding mobility, have demonstrated the validity and historical relevance of Cerdà's urban contributions.

The changing processes we face today might be even more disruptive than those caused by the industrial revolution. The global dimension of the digital revolution, the environmental crisis, and the review of territorial governance models have influenced the structure and functions of cities. Facing the need to invent the future of our territory, new urban planning mechanisms need to be defined to overcome the obvious flaws of traditional urban plans.



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Over time, some cities like Vitoria have consolidated an urban development culture that places a consistent focus on urban planning and design.

## DO CITIES NEED A MASTER PLAN?

"The regulating line is a guarantee against wilfulness… [because] making a plan is to determine and fix ideas. It is to have had ideas. It is to order these ideas so that they become intelligible, capable of execution, and communicable." (Le Corbusier, 1923)[1]

We cannot understand modern urban planning without understanding the concept of the city master plan. This concept was born from the industrial city, its problems, and the need to solve them.

However, one cannot be arrogant in believing that the city can be a perfect, designable object. As society became increasingly urban, master planning was more than an instrument to diagnose issues; it was also the therapy[2] that would define what shape the city needed to be in the future. It provided rationale, logic and precise rules and models to counter the disorder that had seemingly taken over the cities.

Nonetheless, the utopian content of modernity was evident in this thinking; even if it was multiple and heterogeneous. The avant-garde architects did not blindly accept an ideal city, they acknowledged that anything close to utopia had to materialise from a plan, whether it was the garden city, the ville radieuse, or the metabolist machine. As a new utopia centred on technologically-driven social change is being outlined today, we must be aware that utopian ideals are only questioned when society loses its capacity to reinvent itself and accepts the status quo.[3]

Most of what is published today as urbanism has hardly any relation to spatial planning, even if it tends to be mistaken for urban planning. Instead, the studies are produced from a varied number of disciplines and viewpoints or rather from sectoral perspectives such as transportation, infrastructure, and commerce. This confusion might be because urban matters are too complex for any one sector or discipline to master.

In response, many urban disciplines have become descriptive rather than interpretative and, as a result, cities are rarely fully comprehended.[4] Urban planning and urbanism should tackle two fundamental aspects of the dilemma of cities. On the one hand, they should seek to identify and explain urban phenomena. On the other hand, they should explore the possibilities of the physical organisation of urban spaces and how the issues related to cities can be addressed through plans, programmes, and projects.

Social sciences, such as history, economy, and geography, along with technical practices like engineering and architecture, will help disciplines establish a conceptual framework of our urban knowledge. However, the process of making a city and building its physical form, is a product of a dynamic interplay between the whole of society and the periodic bursts of social change.

Urban planning shapes the process of making a city, as well as the construction of its physical form, since it reflects how a city is conceived during a given period of its historical evolution and in some instances can itself be an agent of social change. That is why we give special significance to regulations and land-use plans. These are the tools that architects and engineers use to develop the contemporary city. Initially interpreted as the 'art of city building', urban planning has unveiled its condition as empirical knowledge, where difficulties have been found not so much in the conceptual realm and accumulated knowledge, but in the daily management of urban events.

Thanks to studies conducted by Sutcliffe, Hall, Mancuso, Choay, Calabi, Teyssot, and others, we can now understand the role of new urban planning techniques that originated at the end of the 19th century. The evolution of urbanisation and its cultural roots has been described, along with its associated technological and urban design-related issues. The definition of the road network, distribution of lots, building parameters, and the relationship between spaces have gained increased prominence. Land-use plans have traditionally been identified as tools, which have, by design, sought to influence social and economic processes.

Although as planners we seek to highlight the value of urbanism, we do not do so in isolation. We work within a body of knowledge that allows us to build a city that addresses, where possible, the broader social and economic issues. Yet, many argue against planning, stating that the city is too chaotic, too disorderly, too large, too cumbersome; it is governed by the forces of the free market, not the world of planners and urbanists. However, these arguments are weak and simplistically fatalist.

As Italian architect Gregotti pointed out during the uncertainty of the 1970s, the opportunity of urban planning is based on the Greek idea of technique – a 'techné' or knowledge of what is possible, of what can be different, aimed at composing a certain, partial, spatial order.[5]



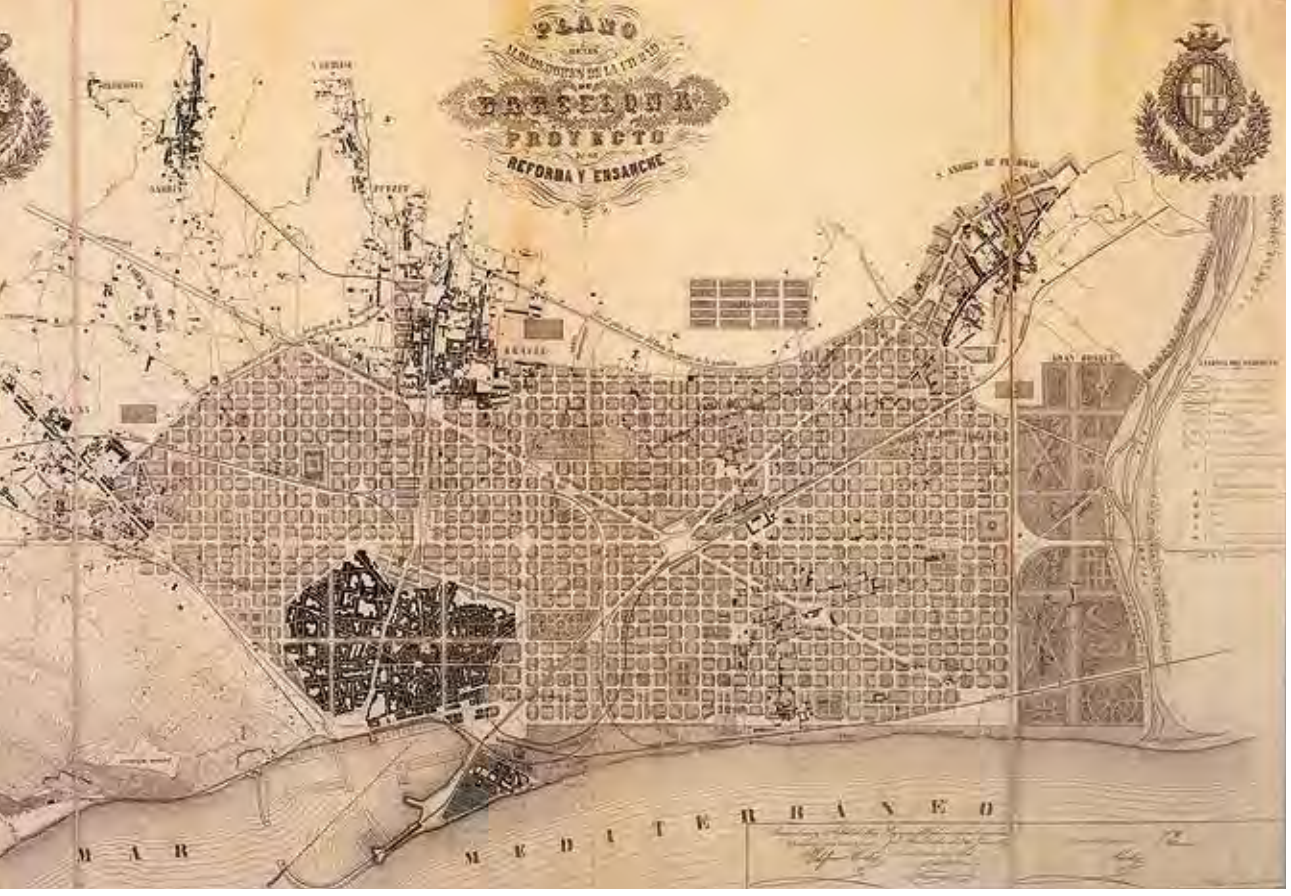
## THE BIRTH OF MODERN URBAN PLANNING

Academic literature places the origins of modern urban planning in the mid-19th century, with the emergence of the German Städtebau and British Town Planning[6] movements that responded to the extremes of industrialisation. While there were prior urban planning practices, a new approach was born, or more precisely a group of disparate methods and regulations came together to administer and better manage cities. Developing steadily until World War I, these new techniques spread throughout Europe; concurrent with a period of intense urbanisation and the heightened role of cities as hubs of production, social intensity, and intellectual activity. This phenomenon also took place on other continents.

During this period of rising urbanisation, an urbanist philosophy emerged that was linked to the social reforms occurring in Europe and North America. Beginning in Germany, this new urban philosophy proposed the first models for the industrial city, with Bruch, Orth, and Arminius[7] attempting to create a solution to solve sky-rocketing prices caused by a hyper-speculative real estate market and high demand. This was exemplified by Berlin's Mietskaserne that comprised of 5 storey high blocks with a central courtyard. This idea quickly spread to house Berlin's rapidly expanding working class, reflecting a planning response to a socio-economic need.

The scale of this urban planning intervention partially stemmed from London's implementation of the Garden City – a concentric urban model with satellite neighbourhoods. This model further evolved due to Paul Wolf's well-known scheme,[8] with its organic shapes. The German discipline of Städtebau however, was conceived from municipal offices as a city building craft. It was a technique rather than a science, and laid the foundations of modern urban planning. The approach was developed from the 1875 Prussian law on Regulatory Plans, which included a number of treatises that introduced the idea of urban growth controls.

More importantly, the Städtebau method relied on studies about demographic growth, zoning, and the control of density, with minimal considerations of habitability or economic models to manage the city. This process yielded the first generation of German urban-planning civil servants. The issue of transportation and the use of land-use plans were key to the creation of the first municipal level urban intervention instruments. They were accompanied by alignment plans, building regulations, and zoning to manage the disconnect between






Barcelona renovation and expansion project. (Cerdá, 1859)

urbanisation and building processes. While the urban transformations that took place saw urban consolidation, the land-use plan was, above all, a strategy for the expansion of rapidly growing cities.

Reinhard Baumeister (1833-1917) and Joseph Stübben (1845-1936) were the two predominant figures during this period. Baumeister introduced the zoning principle in his article 'Town Extensions: Their Links With Technical and Economic Concerns and With Building Regulations' (1876). The tool was applied in Berlin and was central to Frankfurt's 1891 land-use plan.[9] Its main tenet was to separate geographically conflicting urban functions. Following Cerdà's plans for the Spanish city of Barcelona, Baumeister, an engineer, also developed the first German urban planning manual. The importance given to the legal structure of the zoning principles, and the emphasis on housing and public health issues resulted in an influential manual.

The economic function of the plan was also repeatedly mentioned, specifically the intention to stabilise real estate prices. Baumeister's work has demonstrated that land-use plans are far from a utopian vision of the city; instead they were conceived as instruments that could guide urban development through the consideration of land ownership, even if it does not necessarily consider equitable distribution.[10]

Stübben, considered to have an encyclopaedic mind, published a broad and influential paper called '*Der Städtebau*' (1890), which directly translates to 'town building' but was instead subtitled 'Architecture Manual'. The paper laid out the technical and aesthetic rules to enable the development of the land-use plan.[11] He argued that systematically applied zoning principles should guide the organisation and flow of traffic. Adopting a different approach to Camilo Sitte's,[12] Stübben also paid attention to the elements that introduce beauty to urban spaces. In the second edition of his manual in 1910, he tried to explain the expansion of German cities using biological metaphors, a novelty at the time, though no doubt influenced by the imagery developed by biologists such as Haeckel. For example, the microscopic cellular organisation of a vegetable (such as the plant's stem), the structure of its unicellular organism, or radiolaria, became an interesting morphology to interpret the city.

However, the city at the end of the 19th century was becoming an unwieldy organism, increasingly complex with heterogeneous spaces and objects. This was particularly evident in Great Britain where cities such as London – still the world's greatest metropolis at the beginning of the 20th century – Birmingham, Manchester, Glasgow, and

Liverpool had experienced extraordinary growth and the chronic problems caused by unplanned expansion.

Howard proposed the idea of the Garden City in 1898 as a response to the issues of industrialisation, but it is Unwin's manual 'Town Planning in Practice', that synthesised practical experiences. According to the manual, good urbanism should be shaped by the construction of garden suburbs at the metropolitan periphery, in line with the spread of the railway network.[13]

The British suburban model evolved differently to that of Germany's, largely because it was rooted in cities where the industrial revolution had started earlier. Unwin's manual is eloquently subtitled 'An Introduction to the Art of Designing Cities and Suburbs' (1909) and by simply reading its chapters' headers, we discover a series of issues that are still relevant. He writes that public art is the expression of community life, of the unique and irreplaceable conditions that exist in every city, and the need to co-operate in planning as the common good provides individual benefits. A broad set of practices was compiled and dictated that urban planning should create friendly residential spaces. This reflected how housing had acquired specific prominence as a reaction to the previous disastrous situation.[14]

The first British legislation to echo the concept of town planning – the Town Planning Act, 1909 – emulated the German experience. Although approaches to urbanism were reasonably developed by then, planning as a concept was still in its infancy compared to the rest of Europe. In the British context, plans were actually schemes promoting the 18th century land development culture. This was best illustrated in projects such as those by John Wood the Elder and John Wood the Younger in Bath, James Craig's New Town expansion in Edinburgh, and the numerous plans for company towns associated with the Garden City movement.[15] The regulatory environment at the time was a consequence of the requirements established by official transport and public health committees. Furthermore, developments were often insular, they ignored the rural landscape and decentralised housing, and generated a very different urban reality to the one experienced in mainland Europe.

Among the emerging theories about the expansion of cities and the new instruments for urban regulation, two models from these approaches prevail today, often combined.[16] The prevailing philosophy in Europe is that of a continuous city with unlimited growth, organised around new transportation and infrastructure to make the city a viable system of wide and straight streets with complex building regulations moderated against habitability criteria.



This model was inspired by Haussmann's *grands travaux* – an urban scheme aspiring to a 'grand city' style. It includes boulevards and institutional architecture, with large villas that transcend time and provide historic continuity to a city conceived as a work of art. The next section outlines Cerdà's proposal for Barcelona and Wagner's plan for Vienna, two examples of brilliant urban logic. In addition, there exists the polycentric model proposed by the Garden City movement, with its obsession for limiting the size of urban units in Great Britain, the Netherlands, and Scandinavian countries, each with a strong decentralising tenet.

The notion of a continuous city has its origin in the European continental tradition, where cities were driven by liberal economies balancing laissez-faire with state central control, embodied respectively by Adam Smith and Jean-Baptiste Colbert. It is about striking a balance between trusting the free market and acknowledging the influence of politics in organising lives.

This dilemma is central to the foundation of the Western metropolis, which emerged from the industrial revolution. There is an immediate reaction to the ugliness of the industrial city criticised by authors such as Augustus Pugin and Camillo Sitte. They demanded the city's adaptation to 'modern life' so that the continuous city can become a 'beautiful city'. The architect can then create a 'monumentality' that is in tune with the new urban programme, including the 'trapped' nature of the garden, the park, or the health resort.

The discontinuous city is the flip side. It occurs where economic and physical growth linked to liberal capitalism meet at a critical juncture where the destructive nature of humanity and industry undermine their foundations. The 'suburb' sits uncomfortably between both models as an unwanted reality that cannot be avoided. Efforts to 'plan' cities historically arise as the answer to the contradictions of the early industrial revolution city – a period in time when the great industrial city was perceived as dirty, polluted, morally depraved, and dominated by the individualistic ideals of capitalism. References to the antiquated artistic city and the naturalist ideals would inspire new ideas to ambitiously tackle the challenge of transformation. As Lewis Mumford states in quoting Daniel Burnham, author of the well-known plan for Chicago in 1909: "make no little plans; they have no magic to stir men's blood".[17]

## ILDEFONS CERDÁ: A PIONEERING THEORY

A pioneer of modern urban planning is Ildefons Cerdà i Sunyer (1815-1876). He is renowned for both his pioneering work in the 'General Theory of Urbanization' (1867) and for his plans for Barcelona, both serving as an inspiration and result of the aforementioned work. Cerdà's planning approach has proven extraordinarily effective over time. As pointed out by Choay[18] in her considerations about the origins of contemporary urbanism, Cerdà's text initiated the craft.

Cerda drafted his plans for Barcelona while writing the 'General Theory of Urbanization', although it was only published later in 1867. The book established the principles for 'scientific' urbanism and was written with such coherence that it shaped a whole new profesional discipline.

The Barcelona planning concept sought to expand the city through a defined urban layout that would evolve it into a more complex city structure. It was an integrated plan, a tool to organise the city. To achieve this, Cerdà began by articulating what was already there, relying on studies of its different physical characteristics such as topography, the road network, existing urban patterns, and demographic features.

What is exceptional in his work is the interplay between the data analysis and the plan. At the time, Barcelona suffered from overcrowding and public health issues in its housing complexes. Cerdà explained these in detail, providing the first justification for his plan of a 'more open' city. The plan, however, needed to be informed by a detailed and precise knowledge of the urban form.

Cerdà revealed his knowledge as a geographer and undertook a detailed survey of the city, including the city's form, its topography, the road network, its urban hierarchy, as well as Gracia, an important urban core, and its emerging railway network.. He incorporated this analysis into his plan, acutely aware that he needed both evidence and a conceptual framework to create an innovative planning solution.

Cerdá's approach represent a set of early best practises for urban planning, particularly in his vision of the future city and the mechanisms necessary to achieve it. He understood the process by which a master plan guarantees the proper development of the city, its efficiency, and quality, allowing it to depart from the late-baroque monumentality prevailing at the time.

The plan, widely known as the Eixample (the Expansion), was approved by the central government in 1860 and referred to the district between the old city and outlying towns. This was a controversial decision as it was an imposition on the local city hall which had chosen the proposal of municipal architect Rovira i Trias, a plan suited to its time, of a concentric radial expansion originating in a grand plaza and dominated by *beaux-arts* logic.

In the 19th century, the European city, enlarged by absolutist monarchies and the aristocratic system, was affected by the tensions of the industrial revolution and the aspirations of an increasingly influential capitalist bourgeoisie, which started to conceive the notion of a service city. In Paris, Haussman introduced a new way of producing urban transformation by means of expropriation and administrative concessions to revamp the real estate industry. However, the logic was still Baroque. Cerdá introduced the grid, a rational paradigm deliberately designed as a contrast to Baroque philosophies.

Cerdà established variations of the grid, like the diagonal or Paseo de Gracia, and adapted block configurations to demonstrate not only the flexibility of the approach, but also to establish a relationship between the new and the existing. The urban layout, as a set of geometric shapes and infrastructure, supported urban life and development. The layout provided "independence for the individual within the home, independence for the home within the city, and independence for the diverse forms of movement within urban life." Within the grid pattern he did not propose a specific design for the buildings, rather he articulated different possibilities of filling the block as typology. Through his plan and theory, Cerdà 'established' modern urbanism and essential urban vocations that have endured until today.



Barcelona's historical heritage and permanent transformations.

## BARCELONA'S EIXAMPLE: THE VIRTUES OF A GOOD LAYOUT

Cerdà, with his training, conviction, and reformist ideology, designed a stable urban structure for the future Barcelona, a city that is still identified by its 'grid', which has proven its efficiency and durability. While our concern is not whether he was conscious of his legacy at the time, his foresight was surely derived from his interest in the urban issues of the day, namely transportation and mobility. Cerdà saw that in order to meet the mobility needs of a city's inhabitants, the urban form had to adapt to new built shapes, provide sufficient public facilities and spaces, and assimilate the old city to a new layout.

The great accomplishment of the Eixample was the physical layout's ability to adapt to the existing conditions of the territory, such as the railway network or functional structures like Paseo de Gracia. This was largely thanks to a detailed knowledge of topography, which enabled a clear plan for the efficient execution of the city's development.[19]

The main virtue of the Eixample was its versatility and adaptability. Plans were often required to be flexible, without any details on how to achieve such flexibility. Cerdà proposed a very rigid structure, but as discussed earlier, adapted to pre-existing conditions: the old town, where the grid penetrated the logic of the interior urban form; the surrounding consolidated urban nuclei; the physical conditions of Barcelona's plains; and the railway network that would become key to metropolitan life.

The initial geometric pattern, a grid shaped by 133 x 133 metre cells and a building perimeter of 111 x 111 metres with chamfered corners and streets at least 22 metres wide, facilitates adaptability largely due to its dimensions.[20] The versatile grid was modified so that trapezoidal shapes could be incorporated to assimilate the Paseo de Gracia.

Cerdà built the city's expansion plan around the road network, giving consideration to mobility at each road intersection as nodes best demonstrated in the chamfering of building corners. These intersections are still functioning today under intense traffic conditions that Cerdà would have never imagined. In the 'General Theory of Urbanization' (1867), Cerdà observed that the distinctive character of a new civilisation was defined by movement and the ability to communicate. This was built on the ideas of Hénard, president of Europe's first urban planners association, who prioritised

communication and mobility, and sought to incorporate structures such as carrefour (large roundabouts) or *boulevard à redans* (stepped boulevards).[21]

Architects at the time refused Cerdà's grid head on, criticising the "engineer's poor taste", as written by Josep Plá. The grid, however, has proven to be versatile and enduring. The layout has allowed a diverse city form and a set of land-uses to evolve, becoming an exemplar of flexible urbanism. Specific building designs were removed in the final version of Cerdà's layout, demonstrating his view that the plan could accommodate different building typologies, including those that evolve with time. Gaudí's La Pedrera at Paseo de Gracia is one such example. It was not a matter of taste that made his plan so successful, but its adaptive potential to accommodate changing values and tastes.

Let us consider what has happened in Barcelona in recent years, where the Eixample continues to influence urban transformation processes. For example, works undertaken for the 1992 Olympic Games, which formed part of the New Centrality Areas Programme, saw the transformation of areas, such as Tarragona Street, as a continuation of Cerdà's original plan.

The redevelopment of the waterfront on the Mediterranean Sea, completed in 2004 as part of the Universal Forum of Cultures, was also an extension of the Eixample.[22] It is as if Barcelona has constantly been refining and improving Cerdà's plan. The continuation and extension of the grid, the evolution of uses and urban typologies, and the strength of the outcomes have been recognised in urban planning and architectural fields. Barcelona has rediscovered Cerdà, and efforts to complete his project are now directed towards the Mediterranean.

After adhering to the principles of a sustainable city, the grid and the Barcelona block have been promoted in a variety of contexts. The ecologist Salvador Rueda believes its hybrid block is the best example of a continuous, compact, and complex city, largely due to the way it promotes diversity and urban efficiency.[23] Architect Carlos Ferrater's proposal for five new blocks at the seafront have demonstrated that the Cerdà block pattern can still offer contemporary typological possibilities. As an urban model, the Eixample exemplifies how precise and adaptable geometry is key to the quality of city design.

One final example that illustrates the Eixample's coherence and validity can be found in the city council's recent proposal to revitalise the Poblenou district. It is an incomplete part of the Eixample that previously hosted various industries surrounding a small neighbourhood.

As we will see in more detail in Chapter 9 of this book, the 22@Barcelona district is being built to promote activities associated with research, training, and information technologies. The Eixample grid's versatility works here to transform obsolete activities without losing its identity as a hub of production and labour. The flexibility and adaptability of this solution is demonstrated again by the fact that the landowners who comply with the designated uses and typological conditions receive compensation in the form of increased plot ratios. The project shows that it is possible to add new production and formal innovation processes to an 'original' and unique Barcelona.

Cerdà was committed to Barcelona. He was actively engaged in politics and passionately argued for his project. Although Cerda was controversial, his plan occupies a significant role in Barcelona's continued success as a liveable and productive city.[24]

## OTTO WAGNER AND THE TRANSFORMATION OF VIENNA

Vienna, together with Paris, is an exceptional city space that was at the forefront of planners and architects' imaginations during the second half of the 19th century and even today. The expansion of the city beyond the *glacis* (a strip of vacant defendable land), along with the construction of the *Ringstrasse* (a ring road boulevard), was a remarkable urban addition. The development of Vienna illustrates how the inertia of urban plans can shape city forms over time, particularly during a period of rapid urbanisation and construction. After the 1848 revolution, the birth of the modern metropolis in Vienna was largely the result of an agreement between the old aristocracy, and the commerce and industry bourgeoisie.[25] Otto Wagner's (1841-1918) work exemplifies the reaction architects had toward the emerging metropolis at the time and their efforts to offer a solution with 'aesthetic' content, underpinned by an architectural ideal. Inspired by the Renaissance, it offered a 'holistic' solution to a city struggling with the assimilation of the built form and the pressures of urbanisation. Many contemporary urban planners have been inspired by these efforts and continue to study their effects.

Otto Wagner, who was part of the urban elite, matured as an architect during his experience working on the *Ringstrasse*, where the bourgeoisie's ideals came into shape and where the private sector took advantage of new rental housing by creating financial institutions to fund construction. Wagner, an advocate for zoning and comprehensive district plans, won the competition for Vienna's land-use plan in 1893.

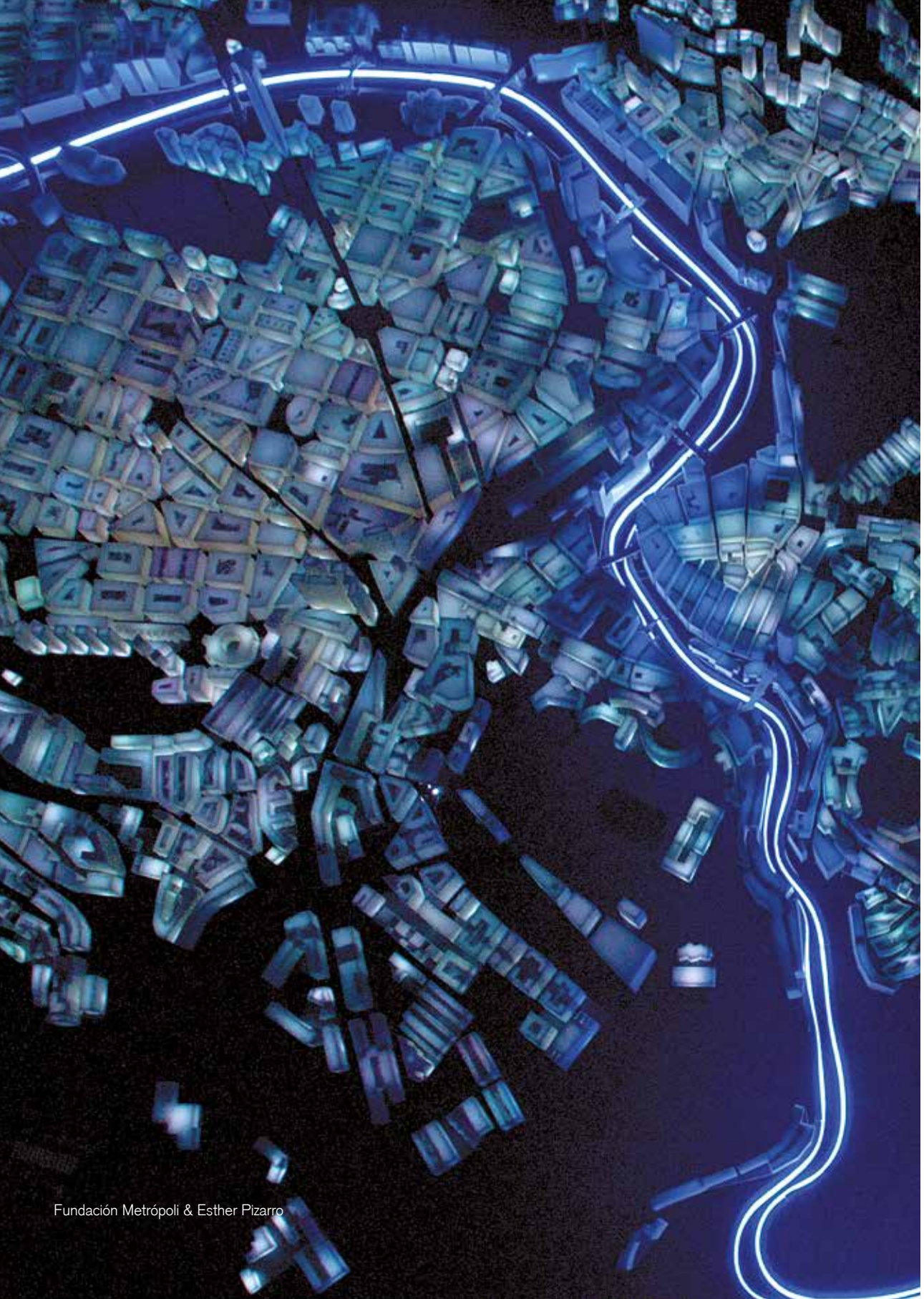
He understood the requirements of the new metropolis, but maintained his view of the city as a work of art, and approached the difficulties presented by the city's aesthetics cautiously. At the same time, and under the motto *artis sola domina necesitas* (necessity is art's only mistress), Wagner promoted the new artistic movement as an active member of the Vienna Secession. "To every age its art. To every art its freedom," proclaimed the Secession. Wagner was among the first to propose functionalism, pointing out the relationship between art and what was useful for modern humans – life's 'practical essence'. To him the metropolis amplified modernity, a place of uncertainty and speed. Direction is needed and the architect as an artist must provide it – a task he relished. Wagner proclaimed economic success as the only guarantee of the necessary independence to 'live according to his own ideals'. Wagner however broadened his career as an architect with engineering tasks, he built bridges and railway facilities; discovering the importance of transportation and infrastructure in urban development and cityscapes.

In 1910, when he was almost 70 years old, Wagner was invited to the International Conference of City Planning in New York where he presented an essay about the metropolis that was be published the following year: *'Die Großstadt; eine Studie über diese*'. The Vienna of the future was portrayed as a city of unlimited growth, a plan in which the central city grows continuously over the territory with a concentric expansion of homogeneous districts. No one so clearly expresses this idea of the 'Great Continuous City' as Otto Wagner did. He proposed a compact and hybrid pattern for every neighbourhood or district, including rental housing and public facilities, dominated by a grand central plaza where two landscaped strips depart.

We should acknowledge Wagner's broad urban planning experience, his intense understanding of the city, and his contribution to its development. However, Wagner conceived the urban future as a homogeneous network of extensible streets, articulated by a regular sequence of monumental elements.

In *'Moderne Arkitektur',* Wagner writes: "without doubt the day can and must come when nothing visible to the eye is made without the sanction of art. It should never be forgotten that a country's art is the measure not only of its well-being, but also first and foremost of its intelligence." To him, a nation's art is not only how its well-being is measured, but also its intelligence.[26] However, the Vienna metropolis at the time was emerging through the irregular and progressive occupation of its surrounding space, with an incomprehensible logic. To Wagner, working class housing blocks and the industries that were emerging did not 'fit' into his ideal city, probably because the *Ringstrasse* bourgeoisie ideals still prevailed in his subconscious – a city for an elite suspicious of popular democracy.

Marshall Berman[27] has explained how the urban transformation scenes in the 19th and 20th centuries were rooted in the idea of modernity and progress, which often, in reality, did not match their ideals. Modern infrastructure would transform the surrounding areas; for example, storefronts and cafeterias coexisting with the noisy bustle of modern tramways and crowds in the new avenues. Otto Wagner's experience in Vienna illustrates the challenges faced by an architect who sought to solve urban challenges, such as through integrating the railway or the layout of canals, while preserving his formal nostalgia. The rapid expansion of the industrial city favours a separation between plan and project. The plan is destined to allow the transformation of space by constructing structures that support urbanisation rather than the architect who builds it



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afterwards. Urbanisation creates conditions that enable new infrastructure, which then allows space for expansion and urban transformation, thereby giving rise to tensions between plans and buildings.

Although the Viennese experience demonstrates how the new architecture and the old city can co-exist, exemplified by the work of Camilo Sitte, Otto Wagner, and Adolf Loos, the reality is that the city cannot be controlled by architecture. The architect is still able to offer global images for urban development, however, it is the engineer who creates the necessary base infrastructure that defines it. Only in very exceptional cases, such as Josef Plécnik with his partial projects – bridges, promenades, and public buildings in Ljubljana – or Berlage's project for the expansion of South Amsterdam, do we find that plans were executed as they were designed to by their architects. However, most of the urban projects drawn by Otto Wagner for Vienna, Eliel Saarinen for Helsinki, or Daniel Burnham for Chicago remain as drawings on paper.

Present-day Vienna, just like Barcelona, is still an exemplary city that has been able to integrate tradition with modernity and create a high quality of life for its citizens. A contemporary example of how infrastructure is defining the city is the Neue Donau and Donauinsel projects – an ambitious flood mitigation plan for the Danube River. This project was conceived in 1969 and largely comprised a canal called the New Danube. A new longitudinal park island for collective use and enjoyment was created with the excavated fill. It is one example of how Vienna is promoting sustainability, technological excellence, renewable energy, water treatment, and green innovation as an economic driver, while at the same time enhancing the quality of the city.

The Ensanche Model inspired the growth of many cities during the first stage of industrialisation in Europe.

## THE LIMITS OF CITY PLANNING

City planning classics demonstrate how the urban plan takes on essential functions. The first function has been to provide access and establish the infrastructure and communication system, while the second has been to organise land use.[28] Topics such as transportation, housing, public facilities and services, and naturally the location of economic activities were also directly related to the plan.

The regulatory plan ('*Plan General de Ordenación Urbana*'), equivalent to the master plan, has been Spain's primary planning tool, supported since 1956 by multiple pieces of urban legislation that have been formulated around land property. What makes Spanish law unique compared to other European countries is that it ties the land to a defined system of owner's rights and obligations. The initiative to urbanise is then bestowed upon the owner.

The plan's first decision was to systematically classify land according to usage type within the urbanisation process. In 1979, with the first post-war democratic elections, the master plan echoed the euphoria of local administrations that saw in the plan a unique opportunity to drive the growth and development of the city.[29] However, after the enthusiasm generated by the first democratic urban plans, the logic imposed by the land usage system demonstrated how Spanish urban planning has been subject to the supremacy of land use, even though autonomous communities continued to assume full powers over the issue. The different legislative proposals are still conditioned by the same predominant legal logic, giving rise to endless debates that increasingly turned the master plan into an instrument for the real estate market. The judicial nature of the plans, instruments that regulate exceptional interests, and the Spanish real estate disaster, evident after the 2008 financial crisis, have given rise to doubts about the system.

However, in the 1980s, with Spanish municipalities back in the democratic system, town plans created a new urbanism that confronted the perceived pitfalls of the previous era's development plans. These plans represented a collective project, beyond the concept of road network and zoning. They encouraged public facilities, improved public spaces, and introduced a broad spectrum of quality urban references derived from advances in the morphological type.

This approach promoted the final appearance of planned urban spaces, exceeding the scope of traditional planning by considering the realities of city making. This new approach, although attentive to the preservation of heritage and the value of history as an element of analysis and interpretation, contrasted with previous stances advocating interventions in many Spanish cities. Its brilliance is associated with the collective hope that emerged from democratic municipalities' town planning processes and the determined will to reinstate city values in a renewed disciplinary context. The political significance of this planning activity has been generally positively received.

Since the beginning of the 1990s however, urban planning began to be perceived as a tool for economic growth, with an expansion model that caused social tensions. The lack of connection between the plans and the socio-economic reality was evident, leading to permanent modifications of the plans based on dubious logic. After a brief economic crisis, more urban infrastructure were added and public facility systems were strengthened following Seville and Barcelona's investment models, which were linked to events such as the Expo and the Olympics. This process benefitted cities to a great extent but was at risk of promoting public investment fever by municipalities, supported by the central and autonomous governments. Unfeasible projects were initiated and the situation was in danger of becoming unsustainable in the long term. Once submerged in the financial and real estate crises, cities such as Gerona, Vitoria, Santiago, Valladolid, and Bilbao stand out as examples of successful management.

Gradually, there has been a realisation that master plans are necessary to regulate the legal status of the land and manage the different initiatives that affect its transformation. However, they have been unable to inspire politicians or citizens, creating a crisis along the following lines:

- The conception and revision of master plans have not generated the proper environment for an open and sincere debate between citizens and urban actors about the future of the city. Although the Land Law has established participatory mechanisms, these are usually very limited during the planning process. This is evidenced by the high percentage of refusals rather than proposals, with a predominance of private citizens represented by successful lawyers and town planners to defend their particular interests.
- This has created a gap between master planning and citizens. Plans and texts often use technocratic language employed by experts. Only interest groups with greater power and influence can participate in an increasingly complex and regulated realm. The participation process has become more bureaucratic and distant; the planning methodology is not progressive enough to creatively engage institutions, civil society, and citizens in general.
- A fragmented understanding of the larger urban space has resulted due to the short-sighted scope of master plans and their limitations in relation to

municipal boundaries. The improvement of communication systems and technological developments have allowed some city-wide considerations, producing settlement patterns that are polycentric and surpass political and administrative boundaries. Future opportunities for cities and solutions to their main problems can only be understood within a broader territorial context which does not align with the municipal scale of master plans.[30]

- Spanish master plans do not allow local government officials to politically lead city transformations. Governments have become trapped in inherited situations and the review process is bureaucratic, complex, and longer than the four-year term of office. While being a necessary instrument, the master plan is not a flexible tool for municipal politics and it does not favour the role of the leadership as an agent of urban change.
- The master plan has been unable to establish a strategic role in designing the city of the future. In a global framework of competition and cooperation, cities have found a new and open international context. Cities must acquire instruments that allow them to define an intelligent profile in a changing environment. The increasing prominence of city conurbations internationally further demonstrates the shortcomings of strict urban planning and its decreasing relevance in guiding city-region transformation.

However, along with the classical master plan, specific sectoral planning for infrastructure, mobility, environment, housing, landscape, and new instruments have appeared in Spain over the last two decades. Agenda 21 plans, Land-Use Guidelines, and Intermediate Scale Territorial Plans have tried to respond to these limitations. These are discussed in later chapters of this book.

## THE NEED FOR PLANNING: THE INVENTION OF THE FUTURE

We live in a complex and historic period juxtaposed against an international stage defined by rapid change, and deep political and economic transformations. The opportunities set forth by new scenarios offer an unprecedented incentive to address the challenges facing the transformations of city regions. This is set against an uncertain future where urban areas are fighting for investment, and are also both competing and cooperating for the training, attraction, and retention of intellectual assets – the new base for the creative economy.

It is somewhat obvious to say that our world is now predominately urban and that the concentration of populations in larger cities is the prevailing trend. The data is overwhelming. In 2011, 3.6 billion people lived in cities. In 2025, 2 billion people are expected to live in slums. In 1950, only 85 cities around the world had more than 1 million inhabitants, whereas in 2007 there were already 468 cities. Urban planning faces unprecedented challenges in allowing our societies to craft creative and adaptable solutions that can meet the new demands and transformations the future will present. Planning instruments and management tools must evolve to overcome the problems of bureaucratic complexity that often limit our society's capability to respond. International institutions now advocate for comprehensive planning or integrated urban development, particularly emphasising collaborative, inclusive, and coordinated planning and management.[31] While many still think that real estate speculation directs urban planning, in some cities around the world, urban planning is carried out by competent local governments that produce results. As Jaime Lerner pointed out back in the day, cities are not the problem, they are the solution.

The inability of the urban plan to anticipate the future is still due to the scope of the technological, social, and economic changes in our society. The discontinuous and disparate character of the urban fabric, and the convergence of territorial and local scales, have led us to believe that any idea to intervene holistically is impossible. Bernardo Secchi wrote: "the future of the city and the territory, currently identified with the dimension of the 'city region', of the metropolitan extension, and of the 'urbanised rurality', do not seem foreseeable in the usual simple terms; as if complexity would simultaneously need a greater level of abstraction and precision".[32] If the plan, as an urban tool, cannot provide the foundations to anticipate the future, it still remains a useful instrument to tackle uncertainty, adapt to change, or as proclaimed by some, facilitate urban resilience.

The contemporary city is complex and is characterised by 'the fragment', a space of networks and interconnections, and at the same time a puzzle. It is a space that adds diverse realities in constant transformation. Thus, the difficulty lies in inventing the city's future to overcome the homogenisation trend and formation of generic cities.[33]

This complexity can only be understood in the context of 'urban ecologies' that face the risk of an unsustainable and segregated city. Some urban planners, such as Manuel de Solá Morales, have pointed out the importance of place, the specificities of each city, and the unique opportunities linked to defining and constructing the future through the local context: "Let me say that our cities, to a great extent, grow due to circumstantial actions that take advantage of

opportunities of land and site, novelty or waste, public or private, neighbourhood, or isolation".[34]

The city is not a mere exchange of commodities as the market is unable to solve greater urban issues by relying on supply and demand.[35] Many neoliberal advocates constantly refuse the notion of 'the plan' because of its apparent opposition to the free market and the freedom of action by different city actors. Taking Hayek's 'road to serfdom' to an extreme, the only effective rationale is the one resulting from the balance of individual actions: there is no higher rationale than that of the individual.[36] However, reality is stubborn and market liberalism has been proven over and over again to be unable to solve urban conflicts in different cities around the world. It is also obvious that coherent planning cannot disregard the market since it is a reality of urban economics.

Therefore, we still need planning, but innovative planning capable of inventing the future rather than rediscovering it. The renowned economist, John Maynard Keynes, is credited for coming up with the idea that the future is not foreseen, but invented. The future of the city and its transformation processes cannot be dependent on descriptive logic.

According to Ascher, "to elaborate and direct projects in an uncertain context" is the first principle of urban planning, putting goals before means. Architects and planners must act by acknowledging change in a complex and diverse society, and be informed by disciplines such as sociology, economics, and geography, and be well placed to understand the implications of the "third urban revolution".[37] However, the tendency to adopt a purely prospective approach based on historical trends or on the study of the transformation phenomena experienced by cities in other contexts is insufficient. The city of the future will not be the mere extrapolation of historical trends. The city of the future will be the result of the creative capacity of each generation.[38]

What are the implications of meta-trends and global spatial change for planners? Even the imaginative approaches to sustainable development sketched in this book occur within existing systems of governance, which regulate the development and management of space. Departures into alternative models of sustainable urban development, including those conceived as ecosystems of innovation driven by cities with different degrees of interaction, or by people in their daily activities and uses of cities, have been inscribed in a given environment with its own momentum or an inertia that is necessary. The central challenge for planners in all parts of the world is establishing the bridge between existing solutions and visions for the cities and regions of the 21st century.



Urban futures must also be conceived from an environmental point of view. Besides the spatial and socio-economic dysfunctions stemming from fragmentation and polarisation, the latest preoccupations of development strategies are global warming and climate change. The environment, ecology, and now sustainability, have become a crucial aspect of future planning and require access to a new body of knowledge. In turn, scientists who study these issues desire better insights into the built environment and its potential to alleviate them. We cannot seek shelter in sectoral planning, instead we must promote new planning instruments to overcome friction between space, administration, boundaries, and territorial ownerships.[39]

We have to reverse the planning process and make it more open, territorial, and inclusive. It needs to be more dynamic in establishing bottom-up and top-down dialogues and relationships. It must include feedback mechanisms that allow a holistic approach towards the city, while at the same time identifying and addressing the emerging issues that will define the ideal urban model.

Without a collective creative effort and a leap to imagine the future, spatial planning will be limited to mere regulatory control. Innovative spatial planning must seek unique solutions to the social, economic, physical, and environmental problems affecting humanity. It needs to be focused on a selective group of necessary interventions that will have a positive 'catalytic effect' on the city and its neighbourhoods, rather than proposals with vague criteria or with limited capacity to engage the public and private actors.

Innovative and enterprising spatial planning that is capable of defining strategies and procedures to motivate stakeholders is required. Innovative urbanism has to be less bureaucratic, able to negotiate, defend the public interest, and have consensus capacities to accept the agreements and risks of identified solutions. It has to be focused on urban management, in public-private joint ventures, and reach agreements between different administrations. Innovative urbanism must overcome conventional regulatory approaches and make a strong bid for the design of programmes and projects that will facilitate the dynamic and positive transformation of city and territory.

# 02 THE FUNCTIONAL CITY

Throughout the second half of the 20th century, urban planning was dominated by functionalism. This occurred in the context of reconstruction, expansion, and the transformation of cities, where the principles of architectural rationalism and international style were omnipresent.

In 1933, the Fourth International Congress of Modern Architecture (CIAM IV) with the theme 'The Functional City' was held aboard the Patris, a ship travelling from Marseilles to Athens. The Charter of Athens, undoubtedly one of the most influential urban planning documents of all time, originated at the CIAM IV.

After World War II, Europe was rebuilt with these ideas to address rapid growth and transformation. Brazil's capital, Brasilia, is one transformative example of the implementation of functionalist ideas in their purest form. Since the 1960s and 70s, despite the theoretical coherence of the functionalist approach, real urbanism began to display increasing contradictions such as the breakdown of urban spaces, decline of traditional centres, and the drastic growth of enormous peripheries that became generic spaces without quality. The selected case studies portray some of the crucial urban challenges that cities face today.

- # MACHINES FOR LIVING
- # THE ATHENS CHARTER: PRINCIPLES OF FUNCTIONALIST URBAN PLANNING
- # FUNCTIONALISM IN EUROPEAN RECONSTRUCTION
- # A NEW CAPITAL FOR BRAZIL
- # LIGHTS AND SHADOWS OF FUNCTIONAL URBANISM: PERIPHERIES
- # REBUILDING THE FUNCTIONALIST PERIPHERY: SYDNEY, MOSCOW AND BILBAO











Brasilia's layout by Lucio Costa (1957) and a view of the large residential blocks. Brasilia is one of the main landmarks of Functional Urbanism, which continues to show the potentials and limits of such an approach.

## MACHINES FOR LIVING

Throughout the 20th century, urban planning had a clear functionalist predominance. It focused on the principles of architectural rationalism and efficiency in the expansion and transformation of cities. The current belief is that such a vision imposed a mechanical approach to urban issues, and that its 'simplifications' worsened the very problems it tried to solve.

It would, however, be an error to view functionalism only in negative terms or believe that it was solely a product of the principles imposed by architectural elites, such as Le Corbusier. Despite the way functionalism was presented by some of its creators, it was more than just a system of ideal rules uninfluenced by politics and history. Functionalism's evolution was long and complex, expressing greater heterogeneity than is often attributed to it. In fact, the systematic formulation of functionalist urbanism remains unique. It was universally adopted and, to date, critics have been unable to propose an equivalent alternative.[40]

The new functionalist urban planning theory was defined and systematised by a framework developed by the CIAM (International Congresses of Modern Architecture). However, the final proposals of this theory were ultimately controlled by a small group. The Athens Charter, a seminal document published by Le Corbusier in 1933, was also produced at this time. During this period, town planning, which was established as a professional discipline in the late 19th century, started to offer precise tools and set standards for master plans, regional scope, zoning, and social housing. These functionalist ideas became the foundations for the new 'radiant city' and were conceived at the heart of Old Europe to face the challenges of a new era.[41]

Reading the Athens Charter is extremely useful for any professional interested in the topic of cities. Although its language might seem arrogant, we must remember that its origin lies within the modern avant-garde manifestos, programmes, and propaganda of its time, which were sometimes blunt in their naked simplicity.[42] Sigfried Gideon captured this in his 1941 book, 'Space, Time and Architecture: The Growth of a New Tradition', stating that the town must know what functions have to be provided for. 'His task' is to create a whole out of the existing potentialities and conditions.

The Modern Movement architects of the early to mid-20th century forged their ideas for the 'city of the future' during a great outburst of artistic proposals and ideas. At the time, town planning

had to offer a solid response to the chaotic growth of cities, and architecture was given a more significant role.

Architecture would set a precedent through housing and the improvement of domestic life, integrating industrial logic within its processes and finding a field where its ideals could be established.[43] Social housing in a society greatly deficient in decent housing became the first area targeted for improvement. A new city for a new society. As Le Corbusier said: "It is the question of building which lies at the root of the social unrest of today; architecture or revolution".[44]

The Deutscher Werkbund, an association founded in 1907, gathered a number of artists and businessmen from the industrial production world to promote the aesthetic renewal of mass-produced objects and drive German exports. The main ideas that made up the Modern Movement as we conceive it today sprouted from this organisation. "Thou shall comprehend the form and construction of all objects only in the sense of their strictest, elementary logic, and justification for their existence," claimed Henry van de Velde in 1907. In 1919, Gropius founded the Bauhaus in Weimar, the same year that Le Corbusier started publishing his magazine *L'Esprit Nouveau*.

Cornelis van Eesteren (1897-1988)[45] was responsible for Amsterdam's urban planning between 1929 and 1959. He was among the outstanding members of the CIAM – serving as president between 1930 and 1947 – that was directly responsible for a major city. As a young, brilliant, and committed architect in the 1920s, he masterfully introduced new architecture that could coexist with the historic city. He was convinced that modern aesthetics with clean geometrical lines could add value to the historic urban fabric. Clear examples of this urban vision are the competitions for the Ronkin, the extension of Amsterdam's Dam over the Amstel river, and the competition for Berlin's historic boulevard (Unter den Linden). He began drafting the master plan for the expansion of Amsterdam with Van Lohuizen in 1929, with a socially-engaged vision of 'the city as a social event". Just like his colleagues, he was convinced of modern architecture's ability to find solutions, working with experts from different disciplines for the programming and evaluation of new urban needs.

This way, functionalist urban planning established consistency on essential issues, such as the critique of the inherited city, the machinist ideal, and universal modern housing. Functionalism stood against the dysfunctional city, with the urban models of the time seeming obsolete: "The city decomposes, the old city cannot last long, the city does not work any longer, the city is too old".[46] This was the unanimous opinion of relevant architects who had witnessed the horrors of



congestion, unhealthiness, and chaos in large European cities. What then could be the new model? It was industry that contributed concepts of standardisation and the organisation of production, based primarily on the Taylorism or Fordism division of labour. The machine was praised in literature and art; and although some saw a dangerous 'steel cage' in the new order, others welcomed the machine's dictatorship as the paradigm of rational order.

However, the main theme of the Modern Movement was the efficient development of new residential architecture based on new typologies and the ability to meet the massive housing demand. Housing shortages were a constant problem in European cities. The new urban mechanism had barely solved the densification of cities, the deficiency in hygiene standards, the lack of minimum dimensions in a vast majority of dwellings, and the great speculation on land and property. These problems worsened after World War I. The social commitment of young architects to this issue was evident as they channelled all their energy into it. It was all part of a broader programme; they were convinced that housing was the first step towards achieving the real goal of a new world order.

The German *Siedlungen* (housing estates) were the first great examples of integrated modern building typologies and urban morphologies. In 1927, Hugo Häring, secretary of Berlin's association Der Ring stated: "...the work done on contemporary housing shall be considered only as preliminary work, until the problems in urban planning have found the fundamental transformation and those corresponding to the transformation of society. The current construction of suburbs is not the solution at all but a clearly insufficient resource." Häring's reflections would later be confirmed when neither working class housing nor industry were included inside the city, instead they formed the 'periphery', as it came to be known after World War II.[47]

However, it was at the CIAM that challenges and common themes were exposed. It convened for the first time in 1928, at La Sarraz Castle by Le Corbusier and Gideon. The gathered architects defined urban planning as "the organisation of all functions of the collective living in the city and the countryside". The CIAM was the scene of a great international exchange of ideas spanning 30 years, which would rigorously define the new tasks undertaken by urban planning.

The ideas of standardisation and industrialisation of housing and of the house as 'the machine for living', function as the essence of form; integration between city and countryside, and other important issues for city building were all discussed in those Congresses. These ideas were broken down to their basic components, refined by usefulness, and shaped with the greatest possible

simplicity, thereby reducing them to schematic shapes. The topics discussed at the CIAM referred to the concerns of the time. CIAM II was held in Frankfurt in 1929 under the theme 'Housing for Minimum Habitation', while CIAM III celebrated in Brussels in 1930 and focused on 'Rational Site Development'.

## THE ATHENS CHARTER: PRINCIPALS OF FUNCTIONALIST URBAN PLANNING

The 4th International Congress of Modern Architecture was celebrated in 1933 aboard the Patris between Marseilles and Athens, under the motto: The Functional City. The conclusions were collected by Le Corbusier in a book published in 1943, titled 'The Athens Charter'. In this founding document, the systematic principles of modern urban planning were compiled for the first time. However, many felt that the book did not truly represent the diversity of ideas displayed at the congress.

In 'The Athens Charter' (1943), Le Corbusier included some of the ideas he had been expounding since 1922, when he presented the '*Ville contemporaine de trois millions d'habitants*'. Following the 4th CIAM, Le Corbusier continued to eloquently describe the functionalist profile in his other work, such as in the book '*Urbanisme*' (1925), in the controversial '*Plan Voisin*' (1925) for the centre of Paris, or in the book '*La Ville Radieuse*' (1933). The Congress' influence can also be easily spotted in subsequent work, such as in the '*llôt insalubre*' (1937) and in his observations of the 'three human settlements' (1945).[48] Later on, in Chandigarh, Le Corbusier would adapt his functional ideology and integrate it with the landscape vision, although he concentrated his interest on the monumental design for the Capitol Complex.

The Athens Charter's city planning ideas, reviewed by Le Corbusier, were synthesised in the following statement:[49]

"Town planning is the organization of the functions of collective life; it extends to both the urban agglomerations and the countryside. Town planning is the organization of life in all regions. Urbanization cannot be conditioned by the claims of pre-existent aestheticism: its essence is of a functional order. This order includes three functions: (1) dwelling; (2) work; and (3) recreation (the maintenance of the species). Its essential objects are: (a) division of the land; (b) organization of circulation; and (c) legislation. The relationships between the inhabited areas, the cultivated areas (including sports), and the transport areas are dictated by the economic and social environment. The fixing of population densities establishes the indispensable classification. The chaotic division of land, resulting from sales, speculations, and inheritances, must be abolished by a collective and methodical land policy. The redistribution of the land, the indispensable preliminary basis for any town planning, must include the just division of the unearned increment resulting from works of common interest, between the owners and the community."

It is a plan that extends beyond architecture and planning, with a functional character justified by the need to transform the inherited city, to harmonise densities and urban services, solve mobility problems, and modify plot structures.

The Athens Charter is broken into three parts: general concepts regarding the city and its region, the study of the current state of the cities, and the conclusions that originate the doctrines or principles of functionalist city planning. Whatever the impact it has had over the years and, despite presenting relatively nascent ideas, the Charter and the breakthrough it represented remain surprisingly relevant today.

The characteristic inertia of urban processes suggests that the Charter's principles have been partially implemented, with the predominance of biased interpretations and changes serving the economic emerging order. The Charter, however, foresaw solid urbanism with greater clarity than others. The significance given to the regional concept, nature, and the historic heritage of cities by the Charter should also be highlighted. The city is located in its region, because the city can only be understood as part of the geographical, economic, social, and political whole that constitutes that same region. Thus, its administrative and planning boundaries should be based on functional principles, which in turn allow problems to be addressed through a functionalist approach. Compared to the administrative, geographic, or historic concepts of the region, the 'functional region' concept is related to the city's area of influence. The Charter's Article 83 states that the city shall be observed within its area of influence and that the city's limits will be settled according to the radius of its economic action. Adopting the regional scale was undoubtedly a consequence of the deep territorial unbalance provoked by industrial development and the awareness that this could not be melded exclusively within the city.

The Charter also explained how the natural environment influences mankind's existence. Geography, topography, the relationship between land and water, soil, climate, sunshine, and so on, have helped shape mankind's sensibilities and ideology. Even territorial imbalance, caused by the great concentration of population in the cities and the neglect of the land, were denounced:



Fundación Metrópoli





Moscow's radio-concentric urban structure. Space Syntax map. The transformation of Microrrayons into eco-communities is one of the keys for the functional rebalancing of this great city. Image of Moscow in which the different 'times' of the city overlap. The Microrrayons constitute the functionalist periphery.

"The problem of the dwelling, of habitation, is that it takes precedence over all others. The best locations in the city must be reserved for it; if they have been pillaged by greed or indifference, every effort must be made to recover them. Several factors contribute to the well-being of the dwelling. We must simultaneously seek the finest views, the most healthful air (taking account of winds and fogs), the most favourably exposed slopes, and, finally, we must make use of existing verdant areas, create them if there are none, or restore them if they have been ruined." (Article 23)

The relationship with the natural environment was also emphasised: "The weekly hours of free time should be passed in favourably prepared places [...] An assessment must be made of the available natural elements: rivers, forests, hills, mountains, valleys, lakes, the sea, etc." (Articles 38 & 40). Time spent in nature alleviates the effects of the chaotic and unhygienic conditions of the analysed cities. In nature, open spaces, clean air, and sunshine are endless. The model for the new city aims to let nature invade the life of mankind and surround the architecture. Unfortunately, the built reality barely corresponded to these proposals, considering void or open spaces without quality as a sufficient link with nature.

The Charter also argued that the city's historic heritage must be safeguarded, whether comprised of isolated buildings or urban wholes, as it represents an example of a previous culture: "The spirit of the city has been formed over the years; the simplest buildings have taken on an eternal value insofar as they symbolize the collective soul; they are the armature of a tradition which, without meaning to limit the magnitude of future progress, conditions the formation of the individual, just as climate, geographical region, race, and custom do. Because it is a 'microcosmic motherland', the city admits a considerable moral value to which it is indissolubly attached." (Art. 7)

The preceding text seems paradoxical with the Charter's rebuttal to anything that is not purely functional (Art. 57), with its disregard for context (Art. 66) and its veiled contempt for the 'picturesque old' city (Art. 67). Modern architects have rebelled against worshipping history and picturesqueness, and against using styles from the past with aesthetic pretexts in historic areas. These should not, under any circumstances, have priority over housing health standards.

They have also proposed the destruction of shacks around historic monuments to create green

surfaces, even if it destroys the secular atmosphere. Traces of the past must be washed away with a new environment. To them, mimetic methods oppose the great historic lessons which masterpieces from the past show us; that every generation had its own ways and its own aesthetics. Mixing 'false' with 'real' has not provided an image of the whole, nor does it reveal style purity. Instead, it has only achieved a fictitious re-composition that is barely able to discern the true remains that it so intensely hoped to preserve.

Although these ideals might be considered wishful thinking, they demonstrate that the Athens Charter, with its functionalist approach, supposes a real urban planning theory with values relatively independent to the works it has inspired. The structure of the Charter itself is the consequence of a clear analytical method, arising from the generalisation of previously observed situations. Attempts to make sense of the chaotic inherited city are prevalent throughout the remarks of the Athens Charter. It triggered the quest for a new order anchored in reason. In the CIAM's previous work, up to 33 significant cities were observed. These observations generated the Charter's articles that sunk their roots in the irrationality of a degraded city: "The advent of the machinist era has provoked immense disturbances in the conduct of men, in the patterns of their distribution over the earth's surface and in their undertakings [...] Chaos has entered the cities" (Art. 8) "[...] The majority of the cities studied (by the Fourth Congress) today present the very image of chaos" (Art. 71). After the devastating critique of existing cities and the proposal for solutions, the Athens Charter presented its conclusions as a doctrine for new rational city planning.

Housing is crucial as dwelling is the first urban function. The Athens Charter analysed the situation of urban residential areas, denouncing excessive densities in certain historic centres and areas developed during the 19th century industrial expansion with disastrous liveability.

The Charter also pointed out the officially defined zoning that located high-density residential areas in the less favoured areas and low-density luxurious villas in the most privileged areas. The traditional street alignment for housing and the arbitrary distribution of services in relation to housing were also fiercely criticized. So was the pitiful situation of the suburbs. To amend these deficiencies, the Charter proposed to place residential areas in the best urban locations, establish reasonable building densities, abolish housing alignment, create streets, and encourage high-rise buildings with enough distance between them to free land for wide green spaces.



Work, the second urban function, has been developed within the urban context without rational analysis. Housing is often located too far from the workplace, imposing excessive commutes and making rush-hour transportation critical. Lack of planning has generated troublesome locations for industries, while business centres and office buildings have quickly fallen prey to speculation. This conflicting situation demands that future solutions reduce the distance between dwellings and workplaces. Industrial areas must be located apart from residential areas, separated by green spaces, but simultaneously be well-connected to them. Business centres must be placed in the intersections of roads that link major urban elements.

The third function has to do with free time, quality of life, recreation, and anticipating the leisure of society. Open spaces in the city are currently insufficient due to the devastating densification of previous centuries. Many of the preserved open areas are not well distributed and located in the periphery, failing to improve liveability in congested urban areas. Meanwhile, areas that can be enjoyed in people's free time are not well-connected to the city. The Charter proposed that every district should have enough green space to support games and sports for children, teenagers, and adults.

Legislation considering these matters must be introduced. Garden Cities segregate green spaces for private use, which must be assigned to specific purposes, such as parks, schools, youth centres, and libraries. Daily recreation must be complemented with weekly recreation in parks, forests, beaches, hills, valleys, lakes, and other spots of natural interest that must be properly connected to the city through a good road network.

The fourth function, decisive for the new urban structure because it serves all others, is circulation. Careful observation of the cities of that era led to the belief that the road network was designed for pedestrians or carriages but not for cars. The distance between intersections is currently very small and the width is inadequate. The whole network is irrational, inflexible, and not suited for new mechanical speeds. Railways often segregate whole districts, depriving them of the necessary connection with the city. Strict hierarchical division is needed so that each route is designed for a specific type of vehicle. Hectic traffic junctions should have different levels, and there should be a clear differentiation between vehicular and pedestrian streets. In addition, arteries with dense traffic must be interspersed with green areas. To accomplish all these goals, functional organisation and urban planning must prevail.

Each one of the four functions must be accomplished in an ideal manner and be arranged in specific areas that allow for favourable development of each activity. Housing must be placed in locations with ample spaces, clean air and sun, and other essential conditions of nature. The workplace must be arranged in such a way that it dignifies this human activity, separated from, but also well-connected to residential areas. It is essential that facilities for the enjoyment of leisure and free time are planned. Daily recreation must also be located close to housing, while weekly leisure is to be enjoyed in appealing natural spaces close to the city. Lastly, a connection between these diverse functions must be established through a traffic network that guarantees the exchange, yet respects the privileges of each. That is why "urbanism is the outcome of a way of thinking, integrated into public life by means of a technique for action" and an instrument capable of organising society.

Rationalism as a system will arrange the city's functional order through radical zoning, where everything should comply with classification and hierarchical principles. A biological analogy, the living cell, is considered the perfect machine. Family forms the social cell, while the home forms the essential core of urbanism. Houses will be grouped in unités d'habitation of efficient dimensions. The aggregation and organisation of these minor 'units' will constitute the residential framework, completed by urban facilities. The road network plays an essential role in the city, where time management is considered a key planning consideration. Efficient and quick connections to different urban areas can originate a hierarchical road network for every type of traffic.

All these have led to a new concept of urban space that would later be denounced as 'the loss of traditional urban space'. For instance, the alignment of housing blocks on the edge of streets has prevented dwellings from receiving enough sunshine. "*Mort de la rue corridor!*" said Le Corbusier. In fact, the new urban model would also place priority on tall and distant constructions over large green surfaces.

To guard against the threat of private interests, urbanism must organise functions within a strict timeline, through efficient road networks and rational zoning. Urban planning integrated in the corresponding regional plan is necessary to achieve these goals. According to the rational plan, the housing cell (dwelling) and the inhabitation unit (properly dimensioned) will be the base for the residential fabric that must connect to the workplace and leisure areas.

Plans are the instrument for the arrangement of a city, to anticipate its harmonious growth, and guarantee that private interest is subordinate to the collective interest during the construction of the city. The Charter mentioned plans and programmes as urban strategies that would guide the transformation of a city and its growth: "Plans will determine the structure of each of the sectors allocated to the four key functions and they will also determine their respective locations within the whole [...]" (Art. 78); "A regional plan will replace the simple municipal plan [...]" (Art. 83); "It is a matter of the most urgent necessity that every city draws up its program and enacts the laws that will enable it to be carried out [...]" (Art. 85); "The program must be based on rigorous analyses carried out by specialists [...]" (Art. 86). The Charter understood that in order for these goals to be achieved, private interest had to obey collective interest.

However, architecture still prevails in new urbanism, and is responsible for the well-being and beauty of the city: "Architecture presides over the destinies of the city [...] Architecture is the key to everything." (Art. 92). Architecture is predominant in urban tasks. Unlike Camilo Sitte's historicist urbanism that viewed the configuration of public space as fundamental to the urban project, functionalist architects have conceived new buildings as the 'shapes' of a city against an urban 'backdrop', punctuated only by roads. At New York's World Fair in 1939, General Motors presented Futurama, a large urban model designed by Bel Geddes. The functionalist dream was shaped, almost as a prophecy; a city dominated by high-rise buildings, large avenues, and cars in the streets.[50]

## FUNCTIONALISM IN EUROPEAN RECONSTRUCTION

Functionalist urban planning was perhaps too radical, even violent, for the inherited city; it was mainly proposed as a utopia, one that was voluntarist and dogmatic to its critics. As a matter of fact, its implementation could only be partially carried out. The interrelation of issues in the Charter was soon abandoned. The Charter itself was an easy target for critique and urban outrage. It avoided most of the economic, political, administrative, and social mechanisms that organised the complex urban reality, which were the cause for many of its faults. Its schematic rationale seemed to aspire to organise the complex individual and social city life for the archetypical man, without accounting for class or cultural difference. However, the functional city arose due to the opportunity presented by post-war reconstruction, both inside and outside the existing city. It arose in the renovation of consolidated urban centres and in the creation of new social housing in peripheral neighbourhoods, within a very special historic moment of fast urban growth.

In post-war CIAM, there appeared a certain discontent with the functionalist principles of the Charter and a diverse group of architects have strived to complete their postulates. Recurring challenges include creating spaces for communal life, a more humane habitat, or solving the challenges linked to the renewal of city centres. Jose Luis Sert spoke about the 'forgotten fifth function' that related to the participation of citizens in the city's changes. Without dismissing the other four functions, he suggested a new one, namely the modification of the environment to provide a richer urban morphology, as well as a more complex and satisfactory social life.[51] The problem lies in how to achieve these goals. Censure of 'mimetism' or 'pastiche' has not been complemented by mechanisms to assimilate the new construction with the inherited context; that is a task left to architecture. It is one of the principles that can create silent contempt for heritage, easing the erasure of irreplaceable parts of the city and the historical landscape.

The last CIAMs, where all shared concerns about the proper implementation of urban processes, highlight the differences between younger and older members[52] – unhappy with what had been fulfilled and aware that the Charter was not the final solution.

As a matter of fact, some authors saw the Athens Charter – published during the war, in 1942,[53] long after the 1933 Congress – as a manifesto for the reconstruction of the European city. In the post-war context, the Charter enjoyed broad coverage and ensured that the Modern Movement would continue. The functional city, except for the examples we will see, was not built ex novo, but in violent juxtaposition with the pre-existing city, modifying the historic city and creating a periphery that depended on it.

Through the unfolding of functionalist urban planning, the Western urban model had become a centre-periphery model, characterised by increasing discontinuity and heterogeneous urban fabric. The city has grown with an industrial-based economy in a rural world that has definitely changed. Urban fabric blooms in the periphery and the suburbanisation model has become increasingly widespread. The city now gravitates between 'downtown' and 'suburbia'. This dual model, with its unique logic, has a profound indifference towards nature, not only in the wild but in the territory shaped by human action, namely 'the countryside'.

Perhaps the key reason many town-planners consider the functional city a failure lies in its own mechanical paradigm, misinterpreting the city as a controllable object, not only formally, but also culturally, functionally, and socially.



The dimension of urban growth and the urge to rebuild established the need to create master plans according to the principles of the Athens Charter. The role of the government, both state and local, became crucial. The era's effort to build infrastructure and guide the urbanisation processes – including its legislative apparatus – allowed the creation of large residential areas of functionalist influence. The ideas of the Charter unfolded in a technocratic framework in which the town planning technique was established. For example, public facilities, parks and gardens were guaranteed through quantitative standards for the first time. However, in this context of social urgency, plans were distinguished by their abstract contents, their structural profile, and their inability to completely control the real estate market, the excess of which would be the real cause for the failure of the functionalist periphery model.

The most critical voices in Europe found validation in the expansive economic crisis of the early 1970s, questioning the centre-periphery model. Radical zoning was re-examined, along with the discontinuous urban growth caused by the construction of residential and industrial estates that were inappropriately woven into the city's infrastructure. Additionally, unused spaces, derelict spaces (such as dumping sites, wastelands, abandoned crop fields, obsolete industrial areas, slums), and semi-occupied spaces filled with intermediate spaces, began appearing around the city and its periphery. The change in productive systems, the new requirements in the use of space, and the appearance of different lifestyles generated new priorities. Lastly, a restored appreciation for history and a desire to preserve culture emerged to provide a renewed importance to the existing city.

However, it may be unfair for us to heavily critique the functionalist principle as it was formulated based on a specific cultural and historic context. Reality was conditioned by speculative pressure, as well as administrative and political schemes that directed every urban transformation. Functionalist urban planning responded by emphasising functionality, rationality, and technical rigour in urban interventions. They proposed a demanding urban programme that was guided by diverse goals to support urban life.

The usefulness of interdisciplinary studies, the adaptation of uses to pre-existing conditions, the necessity of plans, and the link between planning and the city's regional context are also still necessary. The predominant role of architecture, its importance in improving the quality of life of the city, and even the explicit condemnation of the 'pastiche', are valuable contributions to

the discipline of urban planning. The efforts to define the 'principles of town planning' have been undoubtedly illuminating.

It is dramatic to witness how some plans inspired by functionalist principles lost their architectural content and their aspirations for spatial quality, instead focusing on complex zoning, regulation, and the coefficient system as the legal base for the real estate business. Let us remember a time when the dreams of architects seemed possible and were not alien to the hopes of the people.

## A NEW CAPITAL FOR BRAZIL

In 1823, José Bonifacio, known as the Patriarch, proposed moving the capital of Brazil to Goias and suggested the name Brasilia. The Patriarch then turned an unoccupied and inaccessible place into the present capital of Brazil, a functional city conceived as a monumental garden within its landscape. Brasilia is a complex capital, currently surrounded by new centralities, peripheral neighbourhoods, and self-built modest districts, some built over the camps that hosted the very labourers who built the new city in barely five years.

Lucio Costa entered the competition organised for Brazil's new capital with a brilliant statement and scheme. His proposal was the origin of what would be Brasilia's 1957 Pilot Plan, meant for a city of 500,000 inhabitants. He suggested a simple idea, a paradigm of functionalist urbanism, which could be thoroughly developed if it won the competition. Some authors have compared Brasilia to Chandigarh, pointing out the substitution of a strictly mechanicist rationale with a dialectic rationale, capable of establishing a conversation with local culture and landscape.[54]

Lucio Costa reflected on the very meaning of urbanisation, which he determined was the founding of a city in the middle of the wilderness as an act of colonisation that would establish a starting point for the organisation of an entire region. He did not think of the *urbs* (the city), but the *civitas* (citizens). It was a project that expressed order, adaptation, and a sense of measure which could only be expressed through a scheme of symbolic and monumental quality. Costa's scheme came from the gesture of taking possession of a place; two axes intersecting at right angles.

This cross adapts to the site's conditions; its topography, drainage, and orientation. An axis curves and begins to form an equilateral triangle. The city must not only be the new State's administrative centre, but an elegant and clear cultural centre. The curved axis will be the axis for the modern traffic routes, natural arteries, segregating pass-through, and local traffic. Along this axis, residential areas will be organised. Finally, the civic and administrative centres, commerce and public facilities, railways and stations, and spaces for small industry, will be arranged around the perpendicular axis to form a monumental system. The financial and business district with broad commercial areas are located at the crossroads.

In the centre of the intersection, he proposed a traffic-free platform where all leisure spaces would be placed: cinemas, theaters, restaurants, with pass-through traffic below the platform, and access to parking and inter-city buses. Multi-level traffic ways would ease congestion at junctions and detours. Costa, in considering the coexistence of pedestrians and cars, claimed that the car is not an irreconcilable enemy of mankind. By separating hostile traffic and creating connected pedestrian systems, the ordered transport network articulates the different neighbourhoods.

Meanwhile, the equilateral triangle represents the connection between the new city and the old architecture, hosting the three powers on a stone terrace above the surrounding landscape. Each building represents one of the three powers and will be placed in each of the Plaza's corners, closing the large esplanade of the ministries: the Government, the Supreme Court and the Congress. It is a space designed by Oscar Niemeyer as a great work of architecture, in collaboration with the landscape architect Burle Marx.

A large esplanade emerges from the triangle, creating a second rectangular terrace that adapts to the topography. This is a reinterpretation of an oriental architectural technique to provide the project with coherence and monumental strength. This esplanade is a 'mall' for pedestrians and parades. Ministries are set along the esplanade together with unique urban elements that constitute the heart of the city. The cultural area is located towards the end as a park; and spaces are reserved for the university, general hospital, and the observatory. The cathedral, independent of political power, sits in its own plaza.

Sitting in front of the political space, and on the opposite side of the platform, is the leisure centre stretching from the Opera to the cafes. Costa envisioned this striking place as a combination of Piccadilly Circus, Times Square, and Champs Élysées. Theatres and cinemas are connected through small streets resembling the Rua do Ouvidor, with Venetian promenades and colonnades, articulated by patios with bars, cafeterias, and *'loggias'* above the park. Large hotels and buildings, such as the television towers, line up along the grand axis and complete the global composition of the city project.





Some exemplary projects of Functional Urbanism. The proposal for the unsafe Îlot of Le Corbusier in Paris; the neighborhood of Hansaviertel in Berlin.

Adjacent to the leisure centre are two commercial areas and two areas reserved for the financial districts and white-collar professionals, including the central post office, the Bank of Brazil, and extensive parking lots. There is also a sports district, botanical gardens, and zoo. The municipal square is at the other end of the government square, on the monumental axis, enclosed by the City Council, police headquarters, fire brigade, and public health building.

The residential space consists of rows of housing blocks, arranged in different ways along the traffic ways and protected from them by trees. The original design proposed a second service strip hosting warehouses, garages, shops, and a third strip accommodating squares with churches, schools, commerce, and all the neighbourhood services in pedestrian surroundings. A gradual social order is possible according to the typology and the residential standard, but it has been neutralised by the urban structure, except for places such as the Embassy district. Several residential neighbourhoods were isolated by the trees and wide spaces, which were allocated for single-family houses. Brasilia's main parks would be later designed by Burle Marx.

The cemeteries are located at the end of the residential axis so that funeral processions do not cross the urban centre. The waterfront is destined for residential use, preserving its natural beauty. Several leisure and sports centres are placed between forests, such as golf clubs, yacht clubs, and the presidential residence, which allows for better enjoyment of the landscape. Costa considered the construction process, the different sectors, and obviously the involvement of different architects. The layout concept is easy to understand and could seem too simple; however the resulting structure is compatible with the design of closer places and the complexity of the urban scene. The articulation of the different scales is key to the harmonious relationship between the different areas of the city.

Brasilia today is full of contradictions, many resembling those in major Latin American cities. Perhaps they are more evident in Brasilia due to the stark contrast with its exciting monumental and architectural order. The monumental and modern Brasilia co-exists with the peripheral districts, some of which are informal and host a larger population than that of the formal city. However, the intensity of the main components of the functional city remains: form, structure, and the search for efficient urban systems. The architect's dream is not frustrating, the city makes its people.

## LIGHTS AND SHADOWS OF FUNCTIONAL URBANISM: PERIPHERIES

Popular culture soon found cracks in modern urban planning's discourse of order. A film like Visconti's 'Rocco and His Brothers' (1960) showed the desolation of an industrial city growing in the post-war period. The city comes undone in the vast construction sites that appear due to this growth. But above all, as harshly portrayed by the films of Antonioni and the French New Wave, a periphery of incomplete boundaries has been created, where everything that cannot happen in the city and its continuous pre-established logic, takes place. Filmmakers such as Wim Wenders have carried on that narrative into the contemporary city. The schematism of functional criteria has forgotten the emotions and deep conflicts of urban life, which are both intricate and susceptible to different interpretations. The city cannot be arranged in closed urban communities that communicate only through transportation. In fact, public space is the cultural and social space that is most longed for in the functional city.

Functionalist urbanism, while generating interesting urban complexes, has provoked a rupture in traditional urban spaces. The violent juxtaposition of the new urban sectors built in the periphery, or in the urban voids, often present conflicts of scale, typologies, its loss of the traditional image of the city, its silhouette, and some important elements of its identity. The comprehensive and structuring functionalist planning ideology was soon extinguished. As demonstrated by Campos Venuti with eloquent simplicity, the urbanism of post-war reconstruction was followed by expansive urbanism, which soon came to be known as the 'periphery'.

These contradictions were soon denounced in José Luis Sert's essay, 'Can Our Cities Survive?', a compilation of his conclusions from the Athens Congress. It was a text which had a very different meaning compared to Le Corbusier's Charter that was written around the same time.[55] In it he made clear that the American city had already brought pressing challenges that were very different to those in Europe.

The dissolution of the compact urban model and the outbreak of a city divided between the centre and the periphery, favoured fragmented urban development and generated, in the second half of the 20th century, a discontinuous and heterogeneous urbanisation of the territory.

Suburban development was possible due to large investments in highways and roads that facilitated the use of cars and private transportation. Real estate businesses and the rise of large commercial distribution enterprises imposed their space colonisation criteria on urban areas. The decentralisation of the sophisticated corporate space and its relocation to the periphery originated a true revolution of work styles, space consumption styles, and lifestyles. The new, dispersed central areas coexisted with the old city centres, particularly the leisure and commercial spaces, and allowed for the new mix of culture and consumption to become the new great catalyst of the contemporary city. The periphery imposed itself in a city that can only be understood as a city region, in a territory that has become a great 'collection' of events.

The crisis of the functional city has produced an interpretative void, causing many to start dealing with the real city as if it were something chaotic and baffling. Functionalism is the last planning trend that tried to comprehend and respond to the city form as a whole. The city however, keeps evolving, thwarting attempts to understand it through theories. The city of today is a complex urban system in permanent transformation that cannot be recognised at a glance. André Corboz described the contemporary urban experience with a confusing literary analogy, the hypertext.

According to him, the hyper-city has, above all, a difficult order to comprehend. None of the words used to describe and understand urban phenomena seem to apply any longer.[56] Experience shows that when urban processes are shorter, specific events that can be explained individually appear chaotic when overlapped. We can only comprehend them through an intelligent gaze. The city becomes a palimpsest, the antique manuscript written and rewritten to erase previous text, maintaining only small traces of the past. Not all cities respond in the same way and it might be surprising how European cities remind us about issues previously seen in North American cities. Whether in the downtowns of the European cities or in the new residential suburbs for the 'bourgeois utopia' of the middle-class, there has emerged a uniform or generic city that is extremely vulnerable.[57]

Urban culture usually responds to the question of the city's identity with historical images. It seems incapable of accounting for the immense territory it consumes, filled with objects that are nothing other than the expression of economic activity, places for the social and productive universe, and where profit and efficiency requirements prevail over the sotto voce discourse on sustainability and cultural values.

Complexity and contradiction inhabit the ambiguity, as predicted by Robert Venturi in his research about Las Vegas. Western cities are made up of heterogeneous spaces, of buildings surrounding the large traffic-ways, and places

identified by advertisements, too similar in spite of the distance between them. Functionalism proposed a universal model based on technology's capacity to address urban shapes. However, its validity has depended on its implementation in each case. In plural societies, subjected to permanent change, the urban model has to be permanently debated.

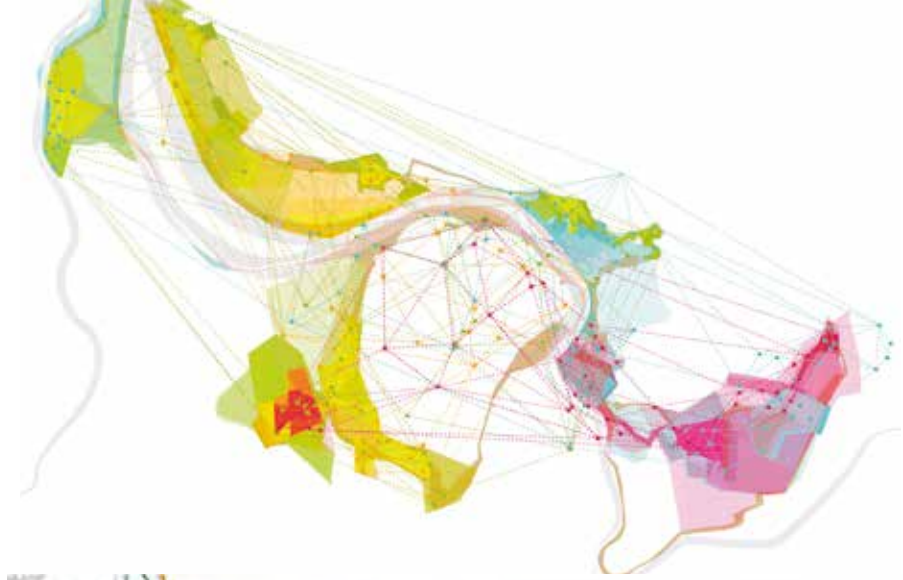
## REBUILDING THE FUNCTIONALIST PERIPHERY: SYDNEY, MOSCOW, AND BILBAO

Last century's city building experience in Europe revealed the need for flexible town planning that works for the 'normal city'. In our own cities, we might discover qualities and features that already work well, precluding the need to invent something new.[58]

Today, providing structure and meaning to the dispersed city is one the key challenges faced by urban planning. Urban planning must focus on transformation, guided by sustainability parameters that will improve the existing city. Once again, an overwhelming task mounts, starting with a review of what some called 'abandoned territories' and extend to the necessary recycling of the endless 'banal peripheries'.

In this book we will approach the issue from several viewpoints: the renaissance of city centres, sustainability applied to the urban fabric, the regional dimension, the project for a more sustainable city, the role of new digital technology in improving city management (smart city), and so on. In this context, one of the main challenges will be to remake the periphery, to regenerate the parts of the city that have been built with poor functionalist criteria. It is not only a matter of reclaiming spaces neglected by industry, railway, port infrsastructure, brownfield or unspecified areas; but also revitalising the large residential complexes built as a functionalist response to the housing shortage. In many cases, this implies a true reconstruction of many neighbourhoods and other urban spaces. The issue is extremely prevalent in Eastern Europe and in the reunified Germany, along with a number of singular initiatives and experiences that acquired different profiles in different contexts, such as in France's *résidentialisation*, which aimed at providing new urban value to peripheral areas.

The functionalist imprint was apparent in the great urban renovation projects of the late 20th century such as London's Docklands, Rotterdam's Kop van Zuid, East Paris, the Big Dig in Boston, and the Olympic Village in Barcelona. It was







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The urban regeneration of the Functionalist Periphery has become one of the dominant urban strategies of Europe in the 21st century. Bilbao's Hearts of Neighborhood Project.

an 'improved functionalism' which incorporated new criteria, such as mixed uses, but still failed to fully assimilate the goals of sustainable city planning. These goals were more intensely and coherently introduced in the last years of the 20th century through small scope renewal operations, such as Vauban in Freiburg, and through ambitious plans to improve disadvantaged neighbourhoods, like Amsterdam's Western Garden Suburbs. The regeneration of several complex peripheral industrial neighbourhoods in the 21st century, such as Minato Mirai in Yokohoma and Hammarby Sjöstad in Stockholm, would later allow for the introduction of urban sustainability principles in the transformation of their inner city spaces, while maintaining the functionalist criteria.

A whole new generation of functionalist peripheral renewal projects are upcoming in innovative cities around the world, focused not only on improving the quality of housing but also on guaranteeing these neighbourhoods' integration with the urban system. This initially included improving the neighbourhoods' connectivity by restructuring transport nodes, but above all, providing them with new central areas. These areas are key to generating life and connectivity, especially with the introduction of new activities that are in line with suitable urban designs. Sydney's activity hubs, Moscow's *mikrorayons*, and Bilbao's Neighbourhood Hearts, are three currently active projects conceived as functional transformations efforts to regenerate their peripheries.

**Activity hubs, Sydney.** In 2015, the city of Sydney had 198,000 inhabitants and was the centre of the Greater Sydney Metropolitan Area, which hosted 4.84 million people. According to statistics from 2015, 500,000 people worked in the city and even more students and tourists commuted daily into it. Therefore, a dialogue between the city and the metropolitan region was essential to safeguard the future of the city. With more than half of Sydney's citizens being born abroad, Sydney's city council found it necessary to strengthen its citizens' sense of belonging through the development of activity hubs.

The programme, integrated into the Sustainable Sydney 2030 Vision, aims to provide the Villages, or city neighbourhoods, with everything needed to guarantee urban life quality, such as commerce, and both public and private services. We should not forget the weakness of current public life; how social diversity and everyday urban life are today leading to isolation and estrangement among citizens. Together with catalytic public projects, the activity hubs are geared towards strengthening local centrality. Hubs, including cafes, libraries, sports spaces and community




Bilbao's Hearts of Neighborhood Project: Ibarrekolanda Neighborhood, Rekalde Neighborhood, Zorroza Neighborhood and Sabino Arana Avenue.

gardens, spatially articulate core activities; thus making them accessible to pedestrians, consolidating the sense of community, and promoting the walkable city.[59] The programme also strives to transform derelict industrial spaces into dynamic neighbourhoods. Completed landmark projects, such as Surry Hills or ongoing ones such as Green Square, aim to encourage citizen engagement in projects affecting their neighbourhoods. Activity hubs serve as a focus for the City's Village communities and transportation: "Sustainable places serving communities and the Villages. Places for people to meet, be part of their community, to shop, work, learn and be creative".[60] The activity hubs programme also supports Sydney's goal to reach 70% reduction in $CO_2$ emissions and the recent Greening Sydney initiative to strengthen the greenery in the city and in every neighbourhood.

**Mikrorayons, Moscow** clearly express Soviet social housing policies. They were conceived in the USSR after 1956 as the primary unit of urban expansion built on rigid functionalist principles. They responded to hierarchical and rational urban planning, including the construction of prefabricated mass-produced dwellings. The mikrorayons of today provide an area for experimentation and constitute the main challenge for urban renewal in Russian cities, particularly Moscow. Mikrorayons, mostly built along large traffic ways leading to the city, became the first periphery and have been subjected to a long period of decline. After the fall of the Soviet regime, the change in the social and economic model introduced a broad variety of private actors with disparate interests, which led to two decisive elements: home ownership and a market economy that affected the real estate system.

Moscow's periphery is today an extraordinary experimental field where all types of strategies coexist (rehabilitation, demolition and replacement, renovation, community planning, and intense speculation). Although coherent, it is difficult to evaluate. Findings from the original investigation about the 'archaeology of the periphery' indicate that the intense urban renewal process affecting the Russian capital must be conducted with consideration for the deep revitalisation of its *mikrorayons*.[61] Their transformation into sustainable communities is one of Moscow's main challenges. Serious traffic congestion could be mitigated with the use of hybridisation in the different residential districts, which could be planned using radical zoning criteria.

**Bilbao's Neighbourhood Hearts.** Bilbao's first residential periphery, built during the Spanish developmental period of the 1950s and the 1960s, is another clear example of a project designed to transform the city via functionalist principles. Working in collaboration with the Bilbao authorities, Fundación Metrópoli developed the Neighbourhood Hearts project to improve the relationship between the city and the first urban periphery. This allowed all neighbourhoods to enjoy the momentum of renewal and activation that has characterized Bilbao's centre.

This project aligns with the Complete City concept, which has been promoted by the Bilbao City Council for several years. The Neighbourhood Hearts project can inspire both comprehensive renewal of mid-sized cities and balanced strategies for complex metropolitan regions. Leaning on a solid base of citizen participation in the design of the city, the goal of this project is linking residential districts to each other and the city centre. At the same time, the project aims to inject life into the central areas, or 'hearts' of neighbourhoods, by improving their public space, economic activity, infrastructure, and urban services. As one of the strategic urban government plans promoted by the City Council, Neighbourhood Hearts has proposed to balance the different areas of the city, so all citizens can enjoy a high quality of life and improve their access to services by shortening physical, economic, and social distances, while reducing existing differences.

The project seeks the transformation of the urban complex into a 'networked city', systematically improving the connection between neighbourhoods and interior accessibility through specific urban renewal projects, based on the uniqueness and identities of each area. Public facilities, the city's overall image, and the different options each neighbourhood can offer are also to be improved. The goal is to "create a competitive, solid, singular, complete, and equilibrated city that will attract projects and create opportunities for new jobs and economic activity",[62] together with community organisations.

# 03 NEW TOWNS

History demonstrates how the most important episodes in the creation of new cities have corresponded to the expansive stages of civilisations. A symbiosis between culture and urbanism always emerges in the creation of a new city.

Rooted in the Garden City movement, the construction of new cities in Europe during the second half of the 20th century was proposed as an alternative to the suburban sprawl that is characteristic of large metropolitan areas. These large projects have always required regional vision, collective hope, leadership capability, economic commitment to building infrastructure, and the creativity to design an attractive and efficient environment for life and work within the urban region.

The New Towns surrounding London, the *Villes Nouvelles* of Paris, and the Tapiola region of Greater Helsinki, are all urban landmarks of the 20th century included in this chapter. They provide exceptional examples of courage and collective response capability within the field of urban planning.

Building new cities is not only an issue of the past. In recent decades, China has experienced intense urban growth, resulting in diverse experiences for new cities. Such is the case of Shanghai's metropolitan area. The transformation of Suzhou, presented in this chapter, is an excellent example. Cities have never grown as much as they have as at the beginning of the 21st century, especially in Asia and emerging countries. The projects presented in this chapter provide lessons of both success and failure in confronting the current challenges faced by many cities.


# NEW TOWNS FOR THE GREAT METROPOLIS
# THE GARDEN CITY MOVEMENT
# THE DECONGESTION OF GREATER LONDON
# LEARNING FROM BRITAIN'S NEW TOWNS
# NEW TOWNS IN SCANDINAVIA. TAPIOLA
# *VILLES NOUVELLES* AROUND PARIS
# NEW TOWNS IN CHINA: THE SUZHOU EXAMPLE




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Metropolitan Area of Kuala Lumpur, and innovation ecosystems around to the Multimedia Supercorridor. New cities associated to the new metropolitan centralities.

## NEW TOWNS FOR THE GREAT METROPOLIS

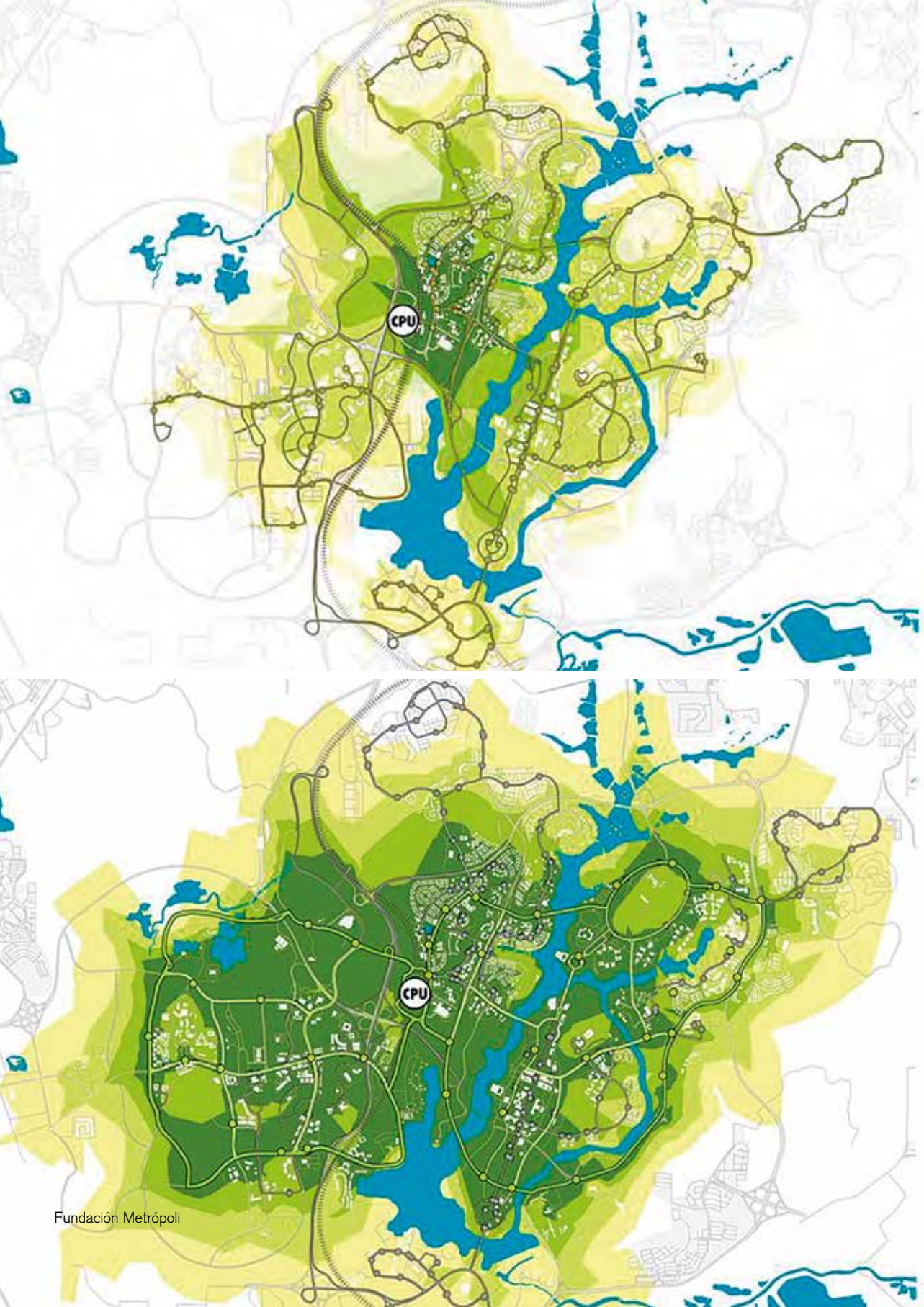
The functionalist ideology of efficient urbanisation has had difficulty managing urban growth. Movements, such as the Garden City, tried to establish the ideal urban size, but in reality, this was impossible. New cities were proposed as a solution to the needs of expanding metropolises.

City planning historians have always paid special attention to new cities. The tendency is to view new cities as the origins of urban planning. The link between culture and urbanism is extraordinarily expressed in the layout of a new city. The city is the essence of the meaning of civilisation. The act of founding a city concentrates the identity of a human collective, its organisation system, and its beliefs. It is hardly a coincidence that many cities use myths to explain their foundations. Victor Hugo's '*Notre Dame de Paris*' (A Bird's-Eye View of Paris) tells a tale of what the city was like and provides the most realistic illustration of life in times past. This was also emphasised in the new city – a crucible for the ideology of a new era. The new city is also distinguished from the 'ideal city', which is dominated by a reflective and ideological characteristic. In comparison, everything in new cities is reflected in the material structure their building imposes on a territory.

When we pay close attention to urban history, it becomes evident that many of the most important episodes in the creation of new cities derives from the expansion of a civilisation and its colonial ambitions. The rational spirit of urban planning was clearly displayed in these instances. This is the reason for the ubiquity of the grid in colonial cities; it can be viewed as a consistent 'gesture imposed on a new territory'. Think of Hippodamos of Miletus and Magna Graecia; the camps founded by the Romans as they advanced from city to city; the medieval bastides; or America's Laws of the Indies.

In this book, we observe the new city as planning's solution to the urban problems created by intensified industrialisation. These new cities are unique as they are an act of internal colonisation. Firstly, their establishment and expansion in the urban hinterland has reconfigured the pre-existing territory and highlighted the extraordinary efficiency of the new city's planning profile.

New cities have been planned and built in a very short time, containing new architecture in their structure. But, above all, new cities are the expression of a superior urban energy, developed in the most extraordinary of situations. New cities




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Putrajaya is a new city, conceived as Malaysia's political capital. Cyberjaya its the new technological city. A metropolitan centrality is being configured in the heart of the Multimedia Supercorridor, developing strategies to integrate these two new cities.

created by 20th century urban planning have been outstanding examples of the capacity for innovation generated by an institutional and collective response.

Throughout the 20th century, new cities were proposed under very different circumstances. Sometimes, the new city followed the guidelines of the previous century, such as the new resort cities by the sea or in the mountains. There are excellent examples of new colonial cities, for instance the cities designed by Henri Prost in Northern Africa. Recent grand capitals such as New Delhi, Canberra, Brasilia, or Putrajaya were also planned and built in the 20th century. The Wall Street Crash of 1929 and the North American reaction to the New Deal led to the creation of new cities that drew from the experience of British Garden Suburbs and the work of planners, such as John Nolen, and were conceived as small communities on the periphery of large cities.[63]

In specific situations, new towns were proposed as an internal re-colonisation to extend agrarian actions. This was seen in the Italian Fascist towns tied to the bonifica, the cities in Dutch Polders, the reconstruction under Franco's Spain, and in reclaimed marsh areas like Saubadia. However, in response to the growth challenges of large cities and their metropolitan areas, this book will focus on the development of new cities in the 20th century. Those in favour of the urban planning movement identified new cities as the answer. This solution arose from an institutional debate on how the public sector could confront the challenging pressures of urban growth and declining living conditions in cities.

From the start, the creation of new urban centres had been proposed as a radical solution to serious urban decline and the conflicts arising between the diverse social groups within the city. However, as William Ashworth claimed, the idea of satellite towns only remained as a proposal due to the difficult process of articulating it institutionally, thereby implying the need for a deep shift in the expectations of a city's growth.[64] The Greater London project had to wait until the post-war era in the second half of the 20th century to find a favourable context: when the economic, political, and social framework of European reconstruction provided Great Britain with enough energy to embark on the construction of new towns.

## THE GARDEN CITY MOVEMENT

It is inspiring to think about the experience of creating new cities in light of the Garden City movement. Although it was developed in suburbs that were dependent on existing cities, it emerged as an alternative city and territory model to the industrial city – the 'countryside-city'. In fact, Ebenezer Howard's (1850-1928) work does not only represent one of the great moments of social reform but is also one of the most important episodes in contemporary town planning. Subtitled 'A Peaceful Path to Real Reform', Howard set forth on a reformist path, convinced that modern society needed a different urbanisation model.[65] A journalist by trade, Howard belonged to an emerging and adventurous middle class. He had a unique experience in North America, where he gained an awareness of the social issues of a growing urban environment and became familiar with early suburban neighbourhoods, such as Olmsted's Riverside. This experience was important in influencing the conceptual definition of his unprecedented urban project: to carry out the social-anarchist ideal of cooperative labour under British industrial capitalist philanthropy, which he had started to envision as 'company towns', such as Bournville or Port Sunlight, where the working-class housing estates would be adjacent to factories.

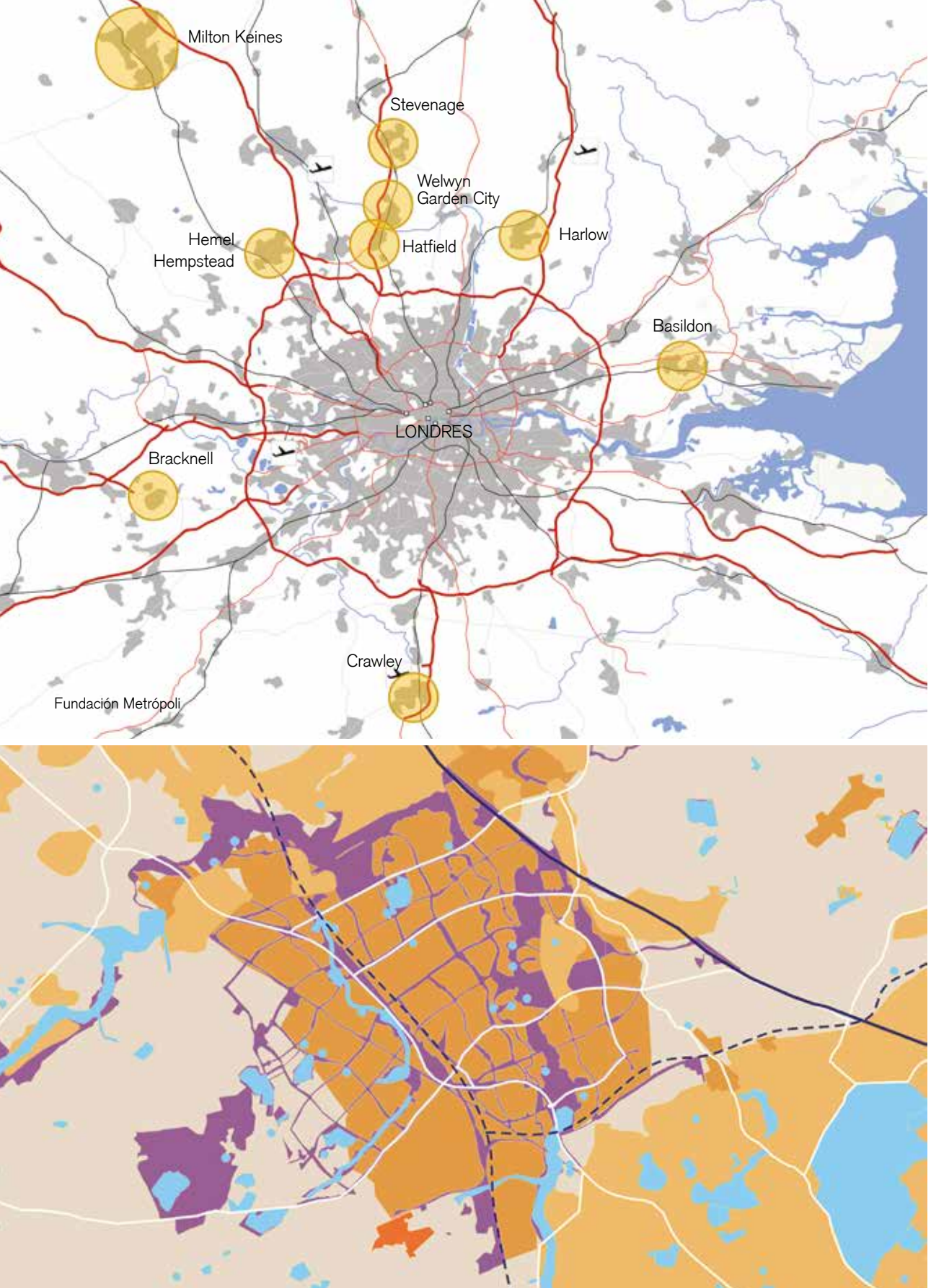
The garden city was seen as a viable alternative to the large congested industrial city, which spread like an oil stain. Ebenezer Howard was aware of the need for a different territorial model that could manage the growth of large cities. He proposed a new concept where the city and countryside could coexist in response to the great urban issues of the time: housing, work, and transportation. The concept began with a very clear scheme, currently known universally as the Social City.[66] The Social City outlined a concentric circle structure, similar to a planetary model, in which the existing central city and the garden cities around it would be integrated with the agrarian space and landscape.

The different elements of this Garden City model were articulated through a transport system, canals, roads, and railways. Howard also incorporated the best examples of inherited urbanism, such as a park system, railway stations, and facilities. He also organised elements of urban structure needed in new neighbourhoods, like schools, parishes, and museums. Howard recognised the importance of mixed-use spaces and proposed incorporating labour and industry into the garden city. Against the ungovernable and diffused spaces of the big cities, the Garden City model has inspired organised and well-balanced urban scale communities.

Many of the programmatic elements of future urbanism were outlined in the Garden City model, such as size limitations, a green belt, the promotion of the metropolitan railway, protection of agricultural space, and the integration of industries with the periphery. It even anticipated the role of the large architectural container, which Howard laid out in his central city, imitating Paxton's admired Crystal Palace. The comprehensive drawings in his booklet clearly illustrate the ideas behind the urban programme model.

The Garden City model should not be confused with garden satellite towns. It is a clear territorial and integrated urban model, adapted to the British countryside. The central city hosts the institutional and important core, buffered by a grand central park, with concentric avenues and radial boulevards, and a limited number of industries. The transition between city and countryside has been established by intensive farms linked to the production of food for daily consumption. Peripheral garden cities have been organised based on the previously mentioned planetary model, connected to the central cities they depend on. This has resulted in several urban nuclei that have deep linkages with the productive British countryside, characterised by large farms, pastures, and cultivated fields. These images and ideas have inspired several generations of town planners who face the challenge of reorganising great metropolises.

The Garden City movement spread quickly in Europe and America, although the proposal's territorial character was abandoned early on. The town planner Raymond Unwin, Howard's close colleague, redefined the Garden City as the Garden Suburb. However, Howard's key idea was the integration of cities and the countryside via the garden as a transition zone. This zone was conceived as a linear park that surrounded and limited the urban zone, whether on a small scale within the city or on the urban periphery. The real estate industry still uses the Garden City label to advertise different types of housing surrounded by gardens. Howard's polycentric model resonates with the urban ecology perspective model, especially the possibility of transforming the traditional central city on a metropolitan scale to resemble a starfish with its arms connected by transport corridors and large green wedges between them.[67]




New cities in the metropolitan area of London. Milton Keynes, an example of a new city outside London's surroundings, with enough size to create a balance between life, work, and leisure.

## THE DECONGESTION OF GREATER LONDON

Since Robert Owen's New Lanark and other 'original' proposals, such as Moffat's suggestion in 1845 to host 350,000 people in Garden Villages about 10 miles from London, a number of urban decentralisation plans have arisen in Great Britain. Both utopian socialism and social Christian ideals proposed village societies with virtually self-sufficient communities. Simultaneously, various paternalistic Victorian industrial initiatives, like development societies and other non-profit organisations, were an ingenious testimony to the active and rich experiences in Britain. However, neither private initiative nor civil society could solve the challenge of holistically managing Greater London.

In 1918, city planners with ties to the Garden City movement promoted the New Towns Group.[68] The Group advocated, both at estate and local level, for a national policy that would develop new cities. The development of Letchworth and Welwyn as garden cities demonstrated that this would be the only option for town planning to progress, made possible by the limited private funding raised by Howard. In 1920, a Ministry of Public Health committee championed the idea and proposed the construction of satellite garden towns surrounding London. The Greater London Regional Planning Committee, which would not be formed until 1927, was inspired by Thomas Adams' experience in New York. It was established that the starting points for the group would either be to enhance the relevance of the transportation system in urban development or criticise the lack of coordination between residences and industries. Adams suggested that town planning should promote a more adequate distribution of land use.[69] However, opinions such as F.J. Osborn's, a colleague of Howard's, insisted that the root of the problem was instead the inadequate distribution of the population across the nation. The key to regional planning would be in the allocation of industrial activity. One of the original objectives of the Garden City movement was to decentralise both housing and jobs. This contradicted the development of exclusively residential satellite neighbourhoods, the so-called bedroom suburbs. After the 1929 financial crash, the first attempt to consider the need for regional scale urban development was the Barlow Report.[70]

The Barlow Report addressed regional economic issues linked to industrial decline in Great Britain and other problems related to the growth of large conurbations. The concentration of population and industry in large urban centres was deemed an economic and social risk. Between 1930 and 1937,

growth was concentrated in a few overpopulated regions, particularly in Greater London. Economically depressed areas were located around smaller urban centres that could not compete financially. The report claimed that the quality of housing and public health was worse in larger cities than in smaller cities where living conditions were better. Government action was required to address these imbalances, especially in London.

Barlow and Howard were among the most influential figures of British post-war urbanism. The work of their committee resulted in the new planning system that made the New Towns movement possible in Great Britain.[71] It cannot be denied that economic growth was driven by large cities, but their disadvantages had to be resolved, most notably the problems arising from congestion. The report recommended the decentralisation of industrial activity and the populations that supported it. The search for an efficient urban system was materialised in the creation of new cities surrounding the central city. The new polynuclei centres hosted homes and workplaces, guaranteeing the development of the whole urban region. The concept of decongestion was important, aimed to not only resolve inefficiencies in the metropolis, but also to develop other regions. At the same time, the new cities were an opportunity to foster a more balanced and just urban society that would improve the quality of life for all workers. The creation of a new centre logically implied the expansion of the metropolitan railway, encouraged by developers to overcome the transportation challenge.

To understand the disciplinary context where strategies to decongest Greater London were formed, it is important to understand what Patrick Abercrombie wrote in his book 'Town and Country Planning'[72] published in 1933, which outlined his vision for a conservationist culture in the British countryside and rural areas. In his view, both landscape and cities must be a fundamental goal in planning. An important quality of the urban plan was the accommodation of diverse objects into a harmonious whole based on their relationships with each other and through careful investigation of local conditions, such as the history of the region. Abercrombie did not intend to achieve global planning of society and the economy. What he sought from a regional approach was to discover the spatial conditions for urban development and their restrictions. During Second World War, between 1941 and 1943, Abercrombie and J.H. Forshaw began to develop the Greater London Plan. Guided by the findings of the Barlow Report and British urban tradition, the plan described his ideas without eschewing the modern vision of urban planning. With this new plan, London would transform in line with two of the most original approaches in British urban planning: the concern for the countryside's productive and landscaping values, and Howard's Garden City legacy.[73]

Abercrombie conceived his urban system around three conceptual pillars: the city as a 'community', a 'regional metropolis', and a 'machine'. Familiar with the plan of New York, Abercrombie incorporated the community concept developed by the sociologist Clarence Perry.[74] Perry established the idea of the 'neighbourhood unit' made up of a nucleus with 5,000 to 10,000 inhabitants. Based on the tradition of early garden cities, he wanted to transcend the mono-functional residential neighbourhood by incorporating adequate services and public spaces. The term 'community' was used, emphasising the importance of a space where people lived and where their needs had to be met by transforming residential neighbourhoods into urban spaces that articulated mixed uses. New cities became the main instrument of decongestion.

The restriction of industrial use in the central area (defined as the inner ring) was accompanied by density restrictions in the suburban rings and the creation of a large open space (the green belt) with an exterior area that enabled the protection of the agricultural system to coexist with New Towns. Further actions were added to this strategic intervention such as readjusting the model of the industrial periphery, suburb rejuvenation, and showcasing the natural landscape. Abercrombie did not deny the relevance of the great central city, familiar as he was with the functionalist vision, which dominated new town planning. However, his knowledge of urban conditions allowed him to focus his interest on the city region, enabling him to interpret the urban conglomerate as made up by both city and territory. This moved away from the predominant mechanistic ideology of zoning regions. The two newest ideas from Abercrombie's plan, besides an efficient transportation network, articulated the urban response to the problems of the great metropolis. Firstly, the green belt, a large open protected space surrounding the city, became the main regulatory tool for urban growth as the precise and defined boundary of the continuous city. Secondly, the system of New Towns beyond the belt generated a constellation of new urban centres for residential and industrial decongestion. Both the new cities and the green belts designed for London would later be encouraged nationwide.

The construction of new cities resulted in the accumulation of an extraordinary wealth of experiences that would lead to the creation of new urban spaces, combining functionalist ideology with the values of the garden city. These experiences include Howard's vision of the territory, the hierarchy of the road system, the organisation of public transportation and urban mobility, zoning of

productive space, the creation of new residential units, and the development of new commercial and institutional centres.[75]

The construction of new towns was made possible by the legal framework of the 1946 New Towns Act. The Act enabled public action, provided economic requirements, and introduced independent corporate management. The programme scope initially established by Abercrombie envisaged 500,000 people in 10 new cities of 50,000 inhabitants each, forming a system of satellite settlements about 40 kilometres outside and around London. Additionally, there were 600,000 inhabitants involved in the planned development of existing minor cities located beyond the green belt. The 28 new cities built in Great Britain were home to around two million people in over 700,000 homes by 1990.

## LEARNING FROM BRITAIN'S NEW TOWNS

Stevenage was the first New Town planned, located 43 kilometres north of London. The first draft of the plan in 1946 was organised around a road network created in accordance with neighbourhood unit principles. It defined spaces for industry, including the first pedestrianised city centre where commerce and administrative functions were concentrated. The vitality of first generation new towns introduced a series of well-defined urban principles, customised to fit local conditions. For example, Cumbernauld, on the outskirts of Glasgow, did not adopt the concept of the neighbourhood unit and the centralities used in first generation new towns; instead it implemented a linear structure.

The creation of new towns became widespread in Europe as a solution to the development of large urban regions. The great success of the British experience lies in the New Town project itself and a developing culture of appropriate and adatpive urban structures. This included a great variety of housing types based on a new understanding of public-private relationships; improved structural and environmental traffic management; the separation of traffic in large vehicle ways; the introduction of pedestrian areas and emphasis of public transportation linked to the idea of centrality; and efforts to encourage a mix of urban applications uses and compact developments with a fixed density. Commuter towns and predominantly residential satellite towns were an anomalous consequence of programmes that were disconnected from the prevailing urban culture.

The application of the urban structure concept was established in architect Sir Frederick Gibberd's plan for the successful new town of Harlow. Gibberd strove to merge architecture with urban planning in his book 'Town Design'.[76] According to Gibberd, the composition of scenic elements must first be approached as a theme of urban planning, with reference to the general context and the organisation of the plan when outlining the structure of spaces, uses, and functions. Gibberd belonged to a group of architects and planners who committed themselves to a progressive and interdisciplinary approach to city-planning that extended to living in the cities they themselves had planned. For instance, Lewis Mumford lived in Sunnyside Gardens. Gibberd criticised architecture's detachment from city planning, especially when it came to the material consequences due to the domination of road engineering in urban planning.

Gibberd emphasised that the key to city planning lay in the dynamic correlation of the diverse elements that make up the city. The modern function of the master plan is to provide the individual with the greatest possible freedom, while upholding the community's interest. The master plan corresponds to three structural points: built groups, landscape, and circulation. Thus, Gibberd foresaw city planning as a landscaping project based on the site's natural conditions, while building regulations that determine the use, intensity, and shape of the city would respond to a functional logic. The new centrality, which concentrates on collective and commercial spaces, is called the 'civic centre'. Both industry and housing are defined by typology and are organised in neighbourhoods. The plan must organise these spaces in relation to their landscape, so as to provide order to the diversity of its elements. The idea of developing new towns with vibrant centres was present in the initial new towns and continues to be in the construction of more recent ones, such as in Milton Keynes or Telford.

The New Towns movement offers a great typological lesson, both in the variety and innovation derived from the needs of residential, workplace, and leisure areas. A diversity of uses in the city centre was encouraged, dedicating ground floors for mixed use and interspersing small commercial buildings and public facilities. This hybridisation provided the New Towns project with the knowledge of the relationship between public and private spaces.[77] This relationship became more important in the design of residential areas, where privacy requirements were greatly valued. Decent residential solutions had been proposed for semi-public spaces such as Vienna's *Höfes* (courtyards), F. Shumacher's sequences of large wooded patios in Hamburg, or *boulevard à redans* (stepped boulevards) that was conceived by Hénard and adapted by Le Corbusier. The design experience of this generation of new towns was unique because all these concepts were applied on a large scale, using a variety of solutions.

Key issues in the design of Britain's new towns lay in its cellular urban structure and traffic management. Traffic had been organised with a hierarchical sequence of large bypasses that defined new neighbourhoods and less busy local roads. Pedestrian islands were proposed, together with perimeter access roads, bypasses, cul-de-sacs, and small clusters of organised dwellings and blocks that enclosed green spaces or interior community parks. The neighbourhood unit was designed to encourage a cellular character and provide it with required services. As such, the relationship between urban life and public space is reflected in the link between circulation and urban form, something that was already mentioned in Howard's Garden City.

Colin Buchanan's famous book, "Traffic in Towns",[78] made a significant contribution in defining the spaces enclosed by main roads as 'environmental areas'. This concept would be widely used in the New Towns movement. 'Environmental areas' refer to urban areas, such as dwellings, workplaces, commercial areas, and institutions, which host activities but are vulnerable to outsider traffic flows. The primary distribution of vehicles in the city is via large axes acting as urban corridors. Buchanan evaluated traffic using three factors: environmental standards, accessibility, and the cost of physical transformations that could be supported. The interrelated scheme defined by these factors demonstrated that lower investment could result in poorer access, while increasing vehicular access would reduce environmental quality. The problem arose from the will to guarantee access while preserving the inherited urban environment. Any future proposal should holistically consider traffic, parking, and public transportation.

Architecture has played a central role in New Towns, particularly in the Anglo-Saxon and Northern European context, where planning has maintained a continuing tension between modern architecture and the traditional way of inhabiting urban spaces. This is far from the distortion created by so many building regulations that generate monotony, or the rigid and repetitive suburbs characteristic of many low-density residential compounds.



## NEW TOWNS IN SCANDINAVIA: TAPIOLA

After World War II, many European cities developed metropolitan plans to test the efficiency and coherence of the new city system. The development of these new cities as an antidote against suburbanisation was only possible in very dynamic contexts where clear planning and urban growth in demography and activity coincided. However, city planners were used to proposing the construction of new neighbourhoods around old cities or their growing peripheries without considering the new city as a worthwhile endeavour. Thus, modern urbanism has been inclined towards fragmented growth, as directed by an 'oil stain' (*tache d'huile*) logic which results in the consolidation of the centre-periphery model. We can establish two types of planning based on the understanding of the urban system as a continuum around a grand centre or as a polycentric system.[79] City planning resorts to natural sciences concepts, using a mechanistic rather than organic profile to identify the metropolitan system as a planetary or atomic system, where the central city is the planet and the new cities its satellites.

In 1950, a few years after the London Plan, a system of satellite cities were planned in Stockholm and linked to the development of the Metropolitan railway: Vällingby, Farsta, and Skärholmen. Under the leadership of Sven Markelius, this plan represented the commitment to an urban functionalist architectural ideology. Although the satellite cities were planned for 50,000 inhabitants and organised around a complex civic centre, these were not autonomous cities. They were functionally tied to the central city, especially with the creation of the greater Stockholm Region in 1971. These new cities were planned while the urban centre was being improved. The first pedestrian spaces, such as Nedre Norrmalm in the 1950s and Hötorget in the 1960s, were created in this centre. Markelius promoted planning actions for the centre of Stockholm that focused on urban transportation, the environmental quality of the city centre, and rejuvenating spaces damaged by air raids.[80] In the 1990s, the functionality of Vallingby and other new cities were scrutinised as part of the overall criticism directed at the city planning of the Swedish Welfare State. However, this neglected the fact that the satellite cities programme had been developed from a strong sense of social commitment and attention to local communities, confident in the opportunities of participatory architecture. Some critical opinions held that the predominance of housing leases had generated social substitution by immigrants, which increased social friction and the potential for conflict. Criticism was unfairly

placed on the urban plan and for many years Vällingby stood as a symbol of the failure of 'satellite towns'.

The planning of Helsinki's surroundings is a unique case, initially called the Seven Towns Plan in 1962, and renamed Uusimaa 2010 in 1967, when the vision of the urban region was extended. Tapiola, the first new town planned around Espoo,[81] was conceived as a district centre that integrated work, urban use, and housing. It is undoubtedly one of the great urban landmarks of the 20th century – a real city created within a very short period. Originally conceived as a small centre for 17,000 inhabitants with parks, forests, and lagoons, in 1991 it had 35,000 inhabitants and it was the central nucleus of a larger settlement of over 80,000 people.

A uniqie factor of the initiative were the public facilities that were built before the housing, in order to demonstrate and convince investors of the project's feasibility; an audacious and unprecedented economic undertaking for Europe. Thoughtful modern architecture combined with generous and intelligent integration into the landscape created a marvel. Talented architects, such as Aarne Ervi, author of the master plan and the civic centre: Aulis Blomstedt and Jorma Järvi, designers of affordable and simply styled single family homes that are perfectly integrated into the surrounding forest; or Raili and Reima Pietilä, designers of the Suvikumpu residential area, an exemplar of the possibilities of modern city landscapes. The 50th anniversary commemoration of Tapiola was celebrated in 2003. It highlighted the ideological fusion between the Modern Movement and Garden City ideology in Tapiola's design. Tapiola, an example of sustainable urbanism, is today the central area of Finland's second city, Espoo, and absorbs a large section of Helsinki's rapid growth. It offers a real example of what urban planning might offer in a social and cultural context, and provides it with meaning.

Copenhagen's 1954 Regional Plan, known as the Finger Plan led by Peter Bredsdorff, used a linear structure originating in the city centre, to famously resemble the shape of a hand with five fingers. Motivated by the aspiration of safeguarding the historic centre and by a grand tradition of conserving the countryside, each of the fingers can be considered as a sequence or string of new urban nuclei, with individual city centres connected via railway or highway and with supporting urban infrastructure. The spaces were designed for agriculture and the protection of landscape, seen as the 'green wedges' located between the fingers. This territorial structure generated congestion problems where radii overlapped and where there was a lack of interaction between the nuclei of the different fingers. This was partly improved by later planning. Despite this, the relationship between transportation and the urban development of this plan is currently considered exemplary.

The new cities programmes developed since 1960 in the United States have demonstrated the limits of ideas when implemented without a well-defined regional scheme. Reston and Columbia near Washington D.C., or Irvine close to L.A., have been studied extensively. They are examples of privately developed cities located near economic zones, such as industries, universities, large commercial centres, or country clubs. Their planned low densities and extensive use of private vehicles are very similar to the suburban periphery that characterises the North American urban landscape. The famous Columbian developer, James Rouse, who developed the Baltimore Inner Harbour and Boston's Quincy Market, advocated scientific planning and public-private cooperation in urban regeneration. However, he would end up being devoured by the whirlwinds of real estate. Peter Hall subsequently coined the term 'Rousification': the creation of an apparently real urban life, as artificial as the one on stage.[82]

## *VILLES NOUVELLES* AROUND PARIS

The urban planning of the Seine basin in Paris provides a clear example of the continuity of the new cities programme, the *Villes Nouvelles*. Its a mega-metropolitan planning strategy has faced obstacles but has managed to endure. We can compare the following brilliant Direct Schemes, which relate to the collective transportation and consolidation of new centralities: *Schèma Directeurs* from the 1960s Master Plan of the Paris Region; the 1969 scheme with a target date set for the year 2000; and the scheme of the 1994 *Bassin Parísien*. The plan is still in progress, and is regularly updated by the Greater Paris planning authorities. This was the case for the 2008 Grand Paris Metropole Douce or the effort committed in 2012 to redefine the whole metropolitan area, or even the Grand Paris 2014 transportation project.[83]

The housing shortage after World War II was tackled in France with the construction of the *grand ensembles*, an outcome made possible by urban legislation in identifying priority development areas and funding agreements. Some of these areas reached an extraordinary size, as exemplified in Toulouse Le Mirail, designed by Candilis, Josic, and Woods for 100,000 inhabitants. Such an act in a mid-sized city like Toulouse has created a dual city; a double centrality was created in the urban region of Toulouse after a university campus and other urban activities were located in Le Mirail.

In 1960, a decentralisation programme tied to the promotion of the *Villes Nouvelles* was promoted. The uniqueness and continuity of urban planning in Paris and its sphere of influence have been reinforced by institutional initiatives to organise an administrative structure that would make the construction of new towns viable within the great French public administrative tradition. The efforts to strengthen urban planning management was crystallised with the creation of institutions, such as DATAR (The Interministerial Delegation of Land Planning and Regional Attractiveness)[84] created and regionally organised in 1963; OREAM (Research Group for the Analysis of Metropolitan Areas) created in 1965;[85] and the *Le Ministère de l'Equipement et de l'Aménagement* (The Ministry of Public Works and Spatial Planning) created in 1968.[86]

It is important to highlight the support of the French public administration in the creation new towns, undoubtedly a difficult task that required long term execution.[87] In 1968, seven metropolises were proposed, each one formed by one or more cities that, taken as a whole, consituted a frame that would be capable of leading France's future development.[88] The new towns were located close to these metropolises. The conceptual framework for the *Villes Nouvelles* was clearly defined in 1963 and aligned with the French policies of strengthening the city system:

a. A powerful metropolis with a main development pillar that will secure the optimal conditions for demographic growth, as well as organise the spatial expansion of existing structures and the creation of new cities.
b. A main communications route encompassing different transportation means, supported by heavy and medium industries.
c. Crosscutting transport axes and multi modal rail and road systems.
d. Fast public transportation linking urban units and industrial areas with tertiary activity within residential areas.
e. A national and international communication network (such as airports, telephone, telex, fax, and other telecommunication means).[89]

The neo-functional collection of conceptual examples conceived at that point in time, such as poles, routes, industrial corridors, and communication networks, are still present today, along with the enduring strategic interest in public transportation. The new cities in the Paris basin have acquired special meaning as an alternative to the *banlieu* and as a tool for decentralisation, thereby responding to the need for intermediate centres. Early master plans (*schémes directeurs*) ensured Paris's influence and its central position in the urban conglomeration. They also configured the system of new towns in two large-scale linear corridors: the first one was northbound departing from the Marne Valley (Marne-la-Vallée towards Cergy-Pontoise, including Charles de Gaulle Airport), while the second was towards the south (from Évry and Melun-Senart towards Trappes, including Orly airport).

The master plans aimed to address the expected rapid urban growth by preventing both the homogeneous 'oil stain' growth model and the saturation of the edges of the main communication routes. This was achieved through agricultural zones and concentrated urbanisation areas to guarantee the integration of settlements and ensure the birth of completely new urban centres. The new cities are service nuclei, hence transportation has been the most important strategic issue from the very beginning. The scheme has thus transformed into a bipolar model, characterised by the definition of a series of urban development catalytic poles: interior poles (Défense, Gare de Lyon, Bercy, Montparnasse) and exterior poles (Cergy-Pontoise, Le Bourget, Trappes, Noissy, Evry and Melun-Sénart). The development of the public transportation system, along with the railway stations, became a determinant of the new metropolitan system's pace of development. However, the railway model has always been dangerously biased towards centre-periphery routes with their incumbent congestion risks.

The planning of the first *villes Nouvelles* began in the 1960s with Evry, Melun-Sénart, and Cergy-Pontoise. Cergy-Pontoise was created at a bend on the river Oise, beside a national park, and expressed the project's initial commitment to the landscape and its protection. One of the most ambitious projects was Marne la Vallée, built as a conurbation over a rural valley with four centres approximately 1.5 kilometres away from each other, and organised around the new RER (*Reseaux Express Régional*) stations. Population growth was initially planned for 500,000 inhabitants in the year 2000; in 2011 it was almost 300,000. Marne la Vallée is home to Disneyland Paris, a resort that receives one of the highest number of visitors in Europe (15.6 million in 2013). The creation of these new cities relied on specific technical agencies supported by the French state.

The master plan of 1994 widened the regional reference scope and was organised around several key issues, such as respect for nature and landscape with the creation of a green and yellow belts (natural and rural); strengthening social and geographic integration via public transportation and job promotion; and enabling exchange by improving the development of, and access between, local centres. In this master plan, public transport strategies were very important, focussed on the interconnectivity of the new cities with ring networks, and reduced the need to travel to the centre of Paris.

After the disruption of May 1968 events in France, the new towns were enhanced, creating new concerns of decentralisation, environment, and participation. In France, criticism of the grand ensembles was tied to the critique of modern architecture. After 1968, an experimentalist trend took over architecture with very diverse movements and results, thereby affecting the coherence of what was developed.

Saint-Quentin-en-Yvelines,[90] the name given to the city developed at Trappes, demonstrates the lack of clear references in the new architecture. Grand ensemble style towers were still being built, neo-vernacular single-family house groups were planned, and industrial or office areas were dominated by informalism coupled with technology – disturbing in their lack of taste. Postmodern figurative experiments coexisted with early high-tech. Although Saint-Quentin's master plan still obeyed the predominantly British model, such as Frederick Gibberd's Harlow, the results were completely different. They were functionalist and had adapted to the landscape, configured with independent urban units with their own small centres pivoted around a city centre. British New Towns enjoyed the maturity of post-war architecture. The combination of town planning and architecture had resulted in some outstanding new cities, such as Tapiola. However, the Saint-Quentin example portrays the difference between urban structure, urban design, and architecture. Developers were concerned with the creation of relevant spaces for their architecture, first in neighbourhood centre projects and subsequently in the heart of the new town centre. This included unique residential complexes, such as the neo-baroque Viaduct and Arcades du Lac designed by Ricardo Bofill in 1974, with the maxim of 'creating a Versailles for the people'.

Only in a few big cities, such as Paris, can one truly find a microcosm of urban culture; places where it is possible to discover the range of urban problems, as well as the technical, social, and institutional capacities to solve them. The experience of the *villes nouvelles* has diminished in a complex metropolitan system, issues such as a lack of transport infrastructure, spatial fragmentation, and social segregation are still being faced. The workplace is currently undergoing deep transformation and many of the neighbourhoods and towns surrounding Paris continue to suffer from great social tensions. Like many other big cities, the transformation of the existing urban fabric has affected the entire metropolitan system. Paris has been considering important inner-city regeneration projects for years, such as Paris Rive Gauche south of Gare d'Austerlitz and the Berçy and Tolbiac ZAC (*Zone d'aménagement concerté* - Mixed Development Zone). The 'metropolitan archipelago' of the L'Île-de-France seeks, in spite of its complexity, to become a group of *territoires partagés* (shared territories).[91] Logically, the most recent projects for the Paris urban region still assign functions to the *villes nouvelles,* since over time, they have become important nodes of the Greater Paris structure.

## NEW TOWNS IN CHINA: THE SUZHOU EXAMPLE

During the past few decades, China has experienced extraordinary urbanisation. This phenomenon is closely linked to the shift in its economic structure, particularly with the huge industrial growth concentrated in large urban areas. China's economic and urban metamorphosis has been led by a communist-based political system open to a market economy. China has experienced unprecedented transformation due to robust economic and physical planning, combined with the vigour of *sui generis* capitalism. There have been deep demographic changes, with massive migration from the countryside to large urban areas, a radical industrialisation process, and a pace of urbanisation that has been hard to replicate.[92] In only a few years, some villages in China have literally become cities with millions of inhabitants. In the transition from a rural society to an urban society, large public works and investment in all types of infrastructure have become prominent, thus enabling the development of new cities. Chinese cities are estimated to add around 350 million inhabitants between 2015 and 2030.

This urban growth process has been a true experimental lab for town planning, involving planners from around the world. Some projects have acquired a reputation for experimentation, such as Dongtan, the new eco-city yet to be developed. Under planning since 2005 by the British engineering firm ARUP on Chongming Island, it has been designed in a very valuable rural and natural area at the mouth of the Yangtze River. Shanghai is one of the most amazing metropolitan spaces of new China, where its expressive character is always changing due to continuous development. The Pudong district is a symbol of recent prosperity, with its tall, high-tech buildings designed by international architecture firms. This is where the Bund, which has the characteristic 'European' appearance of 19$^{th}$ century Shanghai, can be seen.

Shanghai city, which has provincial status (6,340 km$^2$, 23 million inhabitants in 2011, and almost 60% of its territory already urbanised), experienced a variety of very different planning efforts. It has been immersed in the permanent contradiction of fostering growth and controlling the metropolitan space. It




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The design of new cities always presents an opportunity for discussion on urban utopia and experimentation. The Intelligent Island of Indonesia and Bintan Bay New Town.

is a flat territory located within the hydrographic complexity of the Yangtze River delta, with 19 districts and 230 cantons. Around Shanghai, we find new small cities, towns of varying sizes, and a constellation of over 50,000 villages, some with barely a few families grouped around organic settlements without a recognisable structure. Those settlements are characterised by unplanned growth and the absence of identifiable elements, revealing the result of fast and informal expansion. The economic dynamism of the city, improvement in the residents' quality of life, and the need to host expected growth have undermined local urban policy aims to decrease congestion in the central areas and avoid sprawl. Shanghai's metropolitan area has received considerable public investment in infrastructure, such as a new airport, a container port, large bridges, railways, metropolitan trains and highways, including the important milestone of the Expo 2010 and the expressed devotion to improving life in its cities. Within this dizzying growth, the idea of creating new cities to systematically manage Shanghai's growth has sporadically appeared.

Thus, in 2001, Shanghai proposed the 'Strategy for the Development of the Peripheral Cities and Towns', also known as the 'One City, Nine Towns' programme. This aimed to create a system of new cities that would organise metropolitan growth based on a hierarchical framework around the central city, as well as facilitate both the municipal government and provision of services.[93] Facing the challenge of regenerating existing centres, this initiative proposed developing nine urban centres on the peripheral districts of the city in 2015 to form areas with higher development standards and attract foreign investment. Urban policy has encouraged concentrated urban growth, with improved environmental conditions and a more efficient land use approach that dates back to the original British New Towns; however, the institutional stability and long-term determination required to support the project has been non-existent. The Shanghai Planning Bureau sought international cooperation to guarantee a high standard of planning and to maintain the city's cosmopolitan identity from the start. Fundación Metrópoli was involved in the planning of the Fengcheng Eco Linear City project in Fengxian District, one of the new cities accommodating 100,000 inhabitants, located south of the central city.[94] The linear concept of the project for the new city emerged from the connection, via developing transport infrastructure, between the small pre-existing city of Fengcheng (a fort founded in 1386 to defend the coast from pirates) and the capital Fengxian City, about 16 kilometres away. Both cities will host

a metropolitan rail station in the future. The main elements of the Eco Linear City are: Fengcheng's historic centre, strengthened by a main central square, and two linear developments named North and South, their boundaries defined by two eco-boulevards incorporating public transportation and organising a residential system parallel to the canal, which will unites both poles. Only four of the original nine cities have been partially developed. The results have allowed a broad debate on the difficulties of China's institutional framework to coherently organise metropolitan territories. Then there is the unusual aim of giving Shanghai a cosmopolitan character by hiring urban planners from different nations to 'recreate' their own cultures within its different districts, especially the questionable mimicry of foreign buildings such as Thames Town or Weimar Village.[95]

A different example is Suzhou, in the Jiangsu province, which was awarded one of the most prestigious international honours in the urban field in 2014, the Lee Kuan Yew World City Prize. Suzhou was awarded this prize for its astounding economic development, ability to attract foreign companies, its great sensitivity to the built environment displayed in the regeneration of its canals and historic centre, its management of environmental systems and hydrological resources, and its successful social integration of families immigrating from other regions in China.[96] These urban achievements were completed with an advanced public transport system, the latest metro system, and high-speed train connections with Shanghai and other main cities of the country. Suzhou is an example of urban excellence in China and its model is inspiring many other cities within this large nation.

Located at the centre of the Yangtze delta with over 10 million inhabitants, the city is recognised for the conservation efforts of its central landscaped spaces and its rich urban heritage, with almost 2,500 years of history, as seen in the regeneration of the Pingjiang Historic District. At the same time, we can speak in a broader context about this 'contained' strategy of urban development, thanks to the autonomy that planning has provided the new neighbourhoods. These areas have been conceived as a unique version of new cities 'within' the existing urban fabric, with great efforts made to integrate and value productive rural areas, as well as protect the historic spaces. Suzhou has a prosperous economy and a dedicated interest in preserving its valuable marshy landscape, considered in China as 'heaven on earth'. This conservation is designed to be compatible with economic growth, urban vitality, and as its mayor has pointed out, with urban planning focused on its population.[97]



Adopting the principle of 'retaining and repairing the old, in manageable steps' and a committed polycentric strategy to define true new interior cities, has allowed Suzhou to revalue the existing old city and give direction to the rapid and intense urban growth that can arise from well-articulated polarities.

'New urban districts' such as the Suzhou Industrial Park (SIP), developed together with the government of Singapore, or the Suzhou New District (SND), demonstrate some of the strategic approaches visible around the central city. The SIP has realised its vision of becoming a central area, while the Jinji Lake Central Business District is an icon of contemporary Suzhou development. It is not easy, in such a dynamic framework, to manage the complex relationship between the urban and the rural amongst the rich and complex natural landscape of the lakes. Perhaps Suzhou and neighbouring Hangzhou are the most balanced Chinese cities today, where an equilibrium has been reached between growth and respect for local values, through implementing a sustainable and credible development model in spite of the extraordinary transformation taking place. The structured and compact growth fostered by the New Towns movement has inspired the urban plans of new districts that limit development to specific areas, combine housing and workplaces, and maintain their rich agricultural spaces by integrating them with the regional landscape to conserve valuable natural resources. The Gate to the East, an arch-shaped building, was completed in 2015 beside Jinji Lake. It is located next to one of the highest planned buildings in China, the 700-metre high Zhongnan Centre tower, which symbolises Suzhou's outstanding economic success, especially in aligning with policies that have sought to promote a more visible city.

The new cities' theme has retained its appeal under a diversity of profiles. William Whyte supported this idea through his criticism of suburbanisation and the risk of identity loss in contemporary large cities: "If the New Town movement could be stripped of its anti-city utopianism, there would not have to be this decentralist effect". For Whyte, many goals of the new town approach were excellent: the range of housing types; the mixture of industries, commerce, and homes; and the inclusion of service facilities, recreation and open spaces. For him, it would make sense to argue that "new towns should be in the city, or very close to it".[98] Whyte's reflections are aligned with the experience of Suzhou over the past 30 years, where a new city has been created in the heart of a transforming metropolitan space.

# 04 URBAN PLANNING AND PARTICIPATION

- # THE COMPLEXITY OF URBAN SOCIETY
- # THE RIGHT TO THE CITY AND THE RECONSTRUCTION OF SPACE
- # CITIZENS AND CITY-MAKING
- # LOCAL POWER, DEMOCRACY, AND CITIZENRY
- # SMART COMMUNITIES
- # LEADERSHIP AND SOCIAL URBANISM: THE EXAMPLE OF MEDELLIN

The Urban Social movement arose in response to conflicts present in cities during the industrial revolution such as serious decline, segregation, and social conflict. Marxist sociologists made a detailed analysis of the surplus value generated by the urbanisation process, critiquing the mechanisms that led to the privatisation of gains and the socialisation of losses. These attitudes were synthesised in Lefebvre's 'Right to the City' concept, which expressed the citizenry's will to fully enjoy urban life. These approaches had an impact on urban legislation, which gradually incorporated participatory mechanisms into urban planning.

However, despite this thrust, the participatory processes in urban planning have often been too formal and bureaucratic – unable to include civil society and different institutions in the decision-making process and in defining a city model. This is currently considered a governance issue requiring better leadership, effective participation, and innovative capacity, as demonstrated by the Medellin case study.

Identifying creative participatory mechanisms adds a new political dimension to local democracy in urban planning. In 'The Oregon Experiment', Christopher Alexander explored the operative mechanisms for effective participation in urban design processes, with some countries encouraging community planning strategies. Communities capable of actively engaging in the design and transformation processes of their cities are known as 'smart communities'.




## THE COMPLEXITY OF URBAN SOCIETY

The transformation of the modern world originated from the intense urbanisation process that occurred during the industrial revolution. This process led to a much more complex society than the previous rural one, which was divided into rigid social classes. “At one moment in the history of the European West, an event of great importance occurred, but one that remained latent because it went unnoticed. The importance of the city for the social whole became such that the whole seemed to shift. In the relationship between town and country, the emphasis was still on the countryside: real property wealth, the products of the soil, and attachment to the land (owners of land or noble titles). Compared with the countryside, the town retained its heterotopic character, marked by its ramparts as well as the transition to suburban areas. At a given moment, these various relationships were reversed; the situation changed”. This is how Henri Lefebvre[99] explained the extraordinary shift towards an urban model in Western society. The revolution triggered a transformation into a fully urban society. Just like Lefebvre observed, Europe’s urban fabric became increasingly complex as emerging social groups became much more diverse and hence, more fragmented. The intense dynamic processes taking place in cities and the conflicts they produced characterised the impending crisis phenomena. Urban crises were happening one after another at the time.

The industrial development during the 20th century, and especially after World War II, allowed Europe to build Welfare States. The evolving economic model was weakened by the demand for social rights, which simultaneously occurred in different countries. This was not only due to social struggle, but also to sustained productivity growth allowing the creation of jobs and the development of a public welfare system. After the industrial revolution, frequent studies investigated urban social groups and movements. They called for improvements in the quality of life for the working class and in the constantly expanding suburbs, which were characterised by poorly developed infrastructure that appeared permanently unfinished. This demand for urban life slowly became known as the ‘right to the city’. It created a vivid cultural movement that would idealise the classic concepts of civitas and urbs; an ethos for citizen cities where inhabitants are responsible for their own future. The idea was that after mass rebellion, citizens must take governance back from the State and bureaucratised local governments. This idea about a European social metamorphosis

Participation processes not only create value in urban planning, they also provide stability through citizen collaboration.

has regained relevance amongst emerging countries experiencing rapid industrialisation and urbanisation processes.

In his well-known essay about the city, Max Weber compared Occidental and Oriental cities to highlight the complexity of European cities. He did not turn to the historic city but to the mature city during the Middle Ages, specifically in Central Europe and Northern Italy. Western and Eastern cities can be seen as markets. The city is a township that is a public and common space rationally built by a free urban middle class. The motto written on the doors of the Hanseatic League expressed this: *Stadtluft Macht Frei*, which means that city air makes you free. This ideal of collaborative freedom, of collective control over its own destiny, with its evolution towards the social in contrast with the public realm – the space of appearance – was masterfully portrayed by Hannah Arendt. Searching for humane urbanism was manifested polyphonically and from very diverse positions.[100] Take for instance Ambrogio Lorenzetti's series of famous frescoes painted around 1340, which are kept in Siena's Public Palace. Their title is very clear: The Allegory of Good and Bad Government (in the city and in the country). The ideal of a good participatory government finds a manifesto for a harmonious and creative urban life, often through nostalgically referring to Classical Antiquity cities and other historical landmarks. However, the excellence of artistic production must not make us forget the terrible history of violence and domination. A nostalgic longing for Renaissance London under Tudor repression is as real as Thomas More's ideal, imaginary Utopia island. A non-existent place we long for while forgetting that More, who was Lord High Chancellor of England at the time, ended up being brutally executed with his head exhibited on a pike at Tower Gate in London.

At the beginning of the 20th Century, the perception of the big emerging city was indeed disturbing and contradictory. It was seen as the place for immorality and sin, while simultaneously the place for light and the movement of a completely new society. Personalities, such as Dostoyevsky and Baudelaire, were eloquent witnesses to the drama of a society that rose over one that perished, while expressing their enthusiasm for the changes manifested in crowded boulevards, cafes and stores. This was also highlighted by authors, such as Marshall Berman or Henri Lefebvre, who puts it in sociological terms: "In the street, the neo-capitalist consumption is demonstrated by its power, which is not restricted to political power or repression (overt or covert). The street, a series of displays, an exhibition of objects for sale, illustrates just how the logic of merchandise is accompanied by a form of (passive) contemplation that assumes the appearance and significance of an aesthetics and an ethics".[101] A few literary works have been able to offer a complete vision of the new metropolitan experience as the ebullience of activity and crowds, and the superposition of times in a disturbing urban journey: 'Berlin Alexanderplatz' (1929) by Alfred Döblin, 'Manhattan Transfer' (1925) by John Dos Passos, or 'Ulysses' (1922) by James Joyce (1922). Walter Benjamin insisted on the fragmentary condition of the modern city, whether Berlin, Moscow, or Paris, in the interference with which it is perceived: "there is a sunken city, the crowds are menacing". Döblin anticipated this when he wrote "Berlin, for the most part, is invisible",[102] referring to Berlin between the World Wars.

There are still negative perceptions of the big city, as accurately described in North America by Morton and Lucia White in their essay 'The Intellectual Versus the City'.[103] Their critique of big cities flowed from the loss of basic human and social values in the city's confusion: communication, neighbourhood, education, naturalness, and commitment. These issues can still be seen today. In 'The Metropolis and the Mental Life' (1911), Georg Simmel described how the urban lifestyle depersonalised relations and encouraged strong individualism, an attitude derived from the 'violent desire for differentiation' of those who live in a city that 'increases anxious life'. In 'Luxury and Capitalism' (1913), Werner Sombart tried to demonstrate how the modern condition of the big city lies in the concentration of consumerism derived from the concentration of capital. Even prior to that, towards the end of the 19th Century in provincial North America, Thorstein Veblen developed his 'Theory of the Leisure Class' (1899), which was an eloquent critique of the vain, consumerist urban wealthy class.

Pioneers of urban sociology concentrated on the'scientific' research of the new urban population's living conditions, made up mostly of immigrants and labourers transitioning from a rural society to an urbanised one. In the search for more humane urbanism, the Chicago School promoted an unquestionable landmark with 'The City', published in 1925 by R.E. Park, E.W. Burgess, and R.D. McKenzie,[104] which established the urban ecology approach to urban research. Chicago was a city characterised then by huge growth and extremely poor neighbourhoods, such as Little Hell, which was overcrowded with thousands of Italian immigrants. The analysis of relations among different social groups in the city arose from that context, deploying concepts borrowed from ecology studies, like 'evolution' and 'competition'.

Physical space and the social interaction in these neighbourhoods were interpreted as a Darwinian struggle for survival in the context of weak institutions that showed an almost absolute absence of Max Weber's 'city council'. However,

competition was not the only rule. In a city characterised by instability and conflict, the individual increasingly depended on the community. Biological relations needed another level of cultural organisation. While searching for an empiricist analysis of reality, Park and his colleagues soon realised the complexity of the urban fabric and that the understanding of urban societies demanded multiple approaches and perspectives.

According to the Chicago School, the city features both good and evil human nature. The city is a state of mind, a group of customs, attitudes, and feelings organised through traditions. Topics the school found relevant are still applicable today, such as the social analysis of urban expansion, the role of community and neighbourhood, successive dominance logics, the 'natural' character of urban areas, and the resistance against urban planning in the social structure. These are significant issues to consider when understanding urban dynamics and participation processes. Ernest Burgess' concentric model (1923) explaining Chicago's socio-spatial organisation has been the Chicago School's most circulated work and it was soon updated by other models, such as Homer Hoyt's sectorial model (1939). However, their then contested futuristic views on the planning for urban populations has led us to the core issue addressed in this chapter – namely citizen participation in the urbanisation process.

Louis Wirth, author of 'Urbanism as a Way of Life' and a critic of the Chicago School, analysed the ghetto and urban segregation logic. He outlined a minimal definition of the city: "For sociological purposes, a city is a relatively large, dense, and permanent settlement of heterogeneous individuals".[105] Size, density, and social heterogeneity were the analysis categories. Wirth claimed that the urban disempowerment of individuals would define their social actions: "Being reduced to a stage of virtual impotence as an individual, the urbanite is bound to exert himself by joining with others of similar interest into groups, organised to obtain his goals." This complexity of interests soon became a critical counter-movement against the changes that planning sought to impose on the existing city. This resistance was exemplified by Jane Jacobs in her famous book, 'The Death and Life of Great American Cities'.[106] Focusing mainly on New York, she wrote about the value of a neighbourhood comprised of streets and places crowded with people and activity, highlighting the scale and a special dynamism of urban life. City, people, and companies that make up a city cannot be observed through the same microscope as the one used to observe a protoplasm. While it was argued that the inert city would cause its own destruction, Jane Jacobs believed that an alive, diverse, and intense city is the source of its own regeneration, with the internal energy to solve its own problems and needs.



## THE RIGHT TO THE CITY AND THE RECONSTRUCTION OF SPACE

When researching the nature of urban phenomena and the social movements that claim improvements in quality of life, a critique of Lefebvre's positive 'right to the city' notion emerges. Due to technological changes, mobility and infrastructure have defined urban life and changed the urban morphology. This perception led Lefebvre to argue that the city extended beyond its limits. Middle-class neighbourhoods, working-class neighbourhoods, white collar or public servant neighbourhoods, commercial districts, industrial, leisure, health, university, and such areas were differentiated according to the predominant infrastructure or facilities. Lefebvre considered that although architecture and urban planning responded well to housing and industrial needs, they disregarded social life and generated a segregative functional model based on an economic and real estate business logic. A spontaneous, voluntary, and programmed segregation had occurred in the modern city. Lefebvre pointed out that the State and private sector at all levels seek to direct urban functions. However, the right to the city is a right to participate in and enjoy urban life; it is the restitution of the right to work, to appropriation, and to participatory inhabitation. It is a spatial appropriation that belongs to the individual realm as much as to the cultural and social realms.[107]

Marxist sociologists developed an in-depth analysis of urban income to explain the nature of the surplus value generated by urbanisation. Urban development generates private gains and public losses, a dichotomy that presents the real problem of the lack of social justice derived from the systematic accumulation of wealth of individuals by corporations. This accumulation process dictating urban change had to be reduced by a public force able to guarantee reinvestment of profits in infrastructure and urban services. The Parisian school of thought on urban sociology – based on the works of Poëte and Bardet, as well as authors such as Lefebvre, Lojkine, Topalov, and Préteceille – evaluated the city's production, the role of the State in urbanisation, the composition of income, and the analysis of social needs. Other authors, such as Harvey and Castells, built the ideological foundations of new approach, which explained the dominance of value exchange, as well as its effect on land use and the creation of urban conflict.

Urban social movements are a consequence of social inequality generated by capitalist urbanism[108] and the need for public intervention that guarantees a minimum quality life standard; beginning with universal access to housing, and to basic services and facilities. This is a recurring issue in urban planning, and

is still unresolved in many cases. As such, it results in antagonistic views about the role of the urban government, whether it serves the market and a growth-based economy, or the will of its citizens. Participation, understood as part of a new 'governance',[109] could help align different interests and positions. Conflict arises from the social deficits of an urbanisation process that has alienated the community from reaping the benefits of urban growth. An inclusive city is critical, as shown by increasing legislation introducing public processes of information and consultation. The demand for housing, schools, parks, health centres, and more, demonstrate the need for a city based on social equity.

The city cannot be reduced to market interests, limited by the conditions of accumulation and the exchange of wealth, as it results in the systematic social segregation and exclusion of the weakest groups from better-quality urban areas. Some critics have put forward a new theory about urbanism to explain and build the city. Instead of the predominant focus on growth, the city must focus on its function: serving its inhabitants. A broad notion of the quality of life has been reinterpreted today under an ecological logic. Francesco Indovina and Campos Venuti identified that the failure of cities stemmed from urban income, specifically extravagant real estate and the need for austerity. The analysis of urban problems was ideologically guided towards the political arena. At the same time technical autonomy was questioned, along with the intent of explaining urbanism from scientific and quantitative bases. In his analysis of urban social movements during the 1970s, Manuel Castells pointed out the functions that planning should deal with: rationalising and legitimising actions; being an instrument of negotiation and mediation of the demands between different investing groups; and finally, regulating the pressure and protests of the dominated classes.

The evolution of the city has been linked to the transformation of the countryside, not only because of the migration of rural communities to the cities, but also due to the emergence of a new social and territorial order driving that is re-organising daily existence. The rural-urban divide originated in the industrial revolution, due to the employment opportunities offered in city life compared to rural areas. This change also meant that rural areas became an extension of the urban system. At the same time, society's mobility and dynamism allowed urban areas to influence their surrounding territories and reconfigured social relations between the city, countryside, and suburban spaces. The challenge was no longer governing the city but 'governing the territory'. This demanded adjusting the meaning of 'right to the city', to integrate territorial and ecological interests with citizens' interests.



"A city is not a tree", claimed Christopher Alexander. He argued that it is a complex structure of interconnected or juxtaposed realities, of traces and intersections, that cannot be reshaped into a single formula. That is why the city tends to be a space for rupture and systematic innovation. It is true, as stated by Jean Rémy,[110] that everyday difficulties, violence, and the loss of meaning makes us very sensitive to the de-structuring condition of recent urban transformations, and at the same time new coherences appear. The city is also the place where diverse groups maintain their differences and find multiple possibilities of coexistence and exchange to rightfully share the same territory. This does not only facilitate programmed contacts but, above all, multiplies the opportunities for random encounters and enhances the game of reciprocal stimulations. Global solidarity can be substituted by a 'multiplicity of solidarities'. However, the almost direct relationship between place, shape, and social function in the traditional rural model does not apply to the complexity of the contemporary city-territory.

## CITIZENS AND CITY-MAKING

The participation of citizens in the planning process is a principle that has been acknowledged and recognised by several urban legislations. However, today it is still one of the most debated issues in different countries globally. There is increasing criticism towards top-down processes, where governments keep making the city for the people but without the people. Undoubtedly, the effort to promote achievements aimed at generating enthusiasm for the urban strategy has been greater than the processes that guarantee effective participation.

Sometimes, citizen participation tends to be mistaken for planning approval towards the administrative process. Public display of urban information and plans, in itself does not guarantee a participatory decision-making process. Participation cannot be limited to the possibility of providing comment, which has only been useful to defend private interests against plans at a very developed stage. Providing critical feedback could be the means to stimulate active debate and participatory processes. Public information is needed but it is not enough, since participation includes activating processes where citizens, collaborating with and guided by professionals, can influence decisions about the future of the city. This happened in England with the 2011 Localism Act, which promoted neighbourhood planning. It has been developed since 2012 over different urban scales, operating as an articulated defence in the interests of citizens. As a matter

of fact, in Spain, urban planning has not developed real participatory practices, but instead introduces it through other planning processes. Local Agenda 21 and other strategic plans have materialised as participatory forums that aim to define and select strategic actions through a wide consensus. These cases, despite their differences in goals, have served to show the absence of participatory culture and the overall difficulty in enabling it in urban politics. It is in the development of sectoral plans or in smaller scale urban strategies that participation seems to be more relevant. It happens in mobility plans or in rehabilitation strategies where better results have been obtained, whether it is because the goals are well-defined or perhaps out of sheer necessity as urban transportation systems cannot be altered, nor can a neighbourhood be renewed, without considering its citizens. Today, new technologies offer new participatory methods; promoting dialogue between citizens and public authorities that previously did not exist. The rebirth of the leading role of cities in our societies and the increasing relevance of urban leaders are allowing important processes regarding citizen participation to bloom in different parts of the world.

The problem, however, lies in the difficulty of generating participatory processes where users and citizens influence the concept and design of urban projects at an early stage. Many professionals disregard the suitability of local participation throughout the entire planning process when designing the city. The few cases where this has been successful, such as the Byker neighbourhood in Newcastle, designed by architect Ralph Erskine, have become legendary.

Among the attempts to construct a participatory logic in the urban design process, Christopher Alexander's work remains a milestone. His trilogy 'The Timeless Way of Building', 'A Pattern Language', and 'The Oregon Experiment' have fostered an attitude towards architecture and urbanism, guided towards a living physical framework that is varied and attractive for mankind, and encourages the role of users in the transformation of their surroundings. Alexander's statement about the traditional construction processes has shaped the most beautiful buildings and cities of the world over thousands of years: "The great traditional buildings of the past, the villages and tents and temples in which man feels at home, have always been made by people who were very close to the centre of the development process. It is not possible to make great buildings, great towns, beautiful places, places where you feel yourself, or places where you feel alive except when following this model. As you will see, the application of participatory processes will lead anyone who looks for them to buildings, which are themselves as ancient in their form, as the trees and hills, and as our faces are".[111] The order of what is built emerges from the nature of people and things, of animals, plants, and the matter they are composed of. These provide clear accomplishments and examples of constants that will be responsible for such results. It is possible to identify them. We may not always discover new things, but dare not act according to natural rules because we consider them too naive, trivial, or primitive.

According to Alexander, participation is feasible if the individuals that make up a society share a common language, a language alive in the community and useful in building the city. The languages we use are so brutal and fragmented that society itself can no longer articulate design principles that respond to humane and natural considerations. In 'A Pattern Language', Alexander proposed such a common language, in what might be his most important contribution. This language can yield, apparently out of nowhere, the 'nameless quality', thanks to dynamic patterns adaptable to cultural, technological, and social change. Language is composed of an explicit group of simple and practical tools to design and build. 'Patterns' are defined by different scales, formulated in such a way that all persons can use them to configure their surroundings. Each pattern describes a problem that occurs repeatedly and explains the core of a possible solution. It can be used with liberty since it is formulated as a hypothesis that can change its materialisation. The 253 patterns described in his book derive from a broad knowledge of reality, nuanced by the degree of conviction the authors had for their archetypical characters. These patterns have a practical interest that is still extraordinary.[112] It is not about 'the language' but 'a language' that helps forge different personal languages bonded by their roots and meaning, and that as a whole, allow for a fertile, varied, and harmonious collective expression.

In 'The Oregon Experiment', Alexander described the attempt for a practical path toward the application of previous ideas within a specific community; in this case, the plan for Oregon University. He advocated that the building and planning process within a community creates a physical frame suited to human need, but only if six principles are observed: organic order, participation, growth in small doses, patterns, diagnosis, and coordination. The organic order principle is not formal but structural, it deals with a process where everything gradually emerges from 'local action'. To achieve this order, the community must not adopt any plan, instead it must act iteratively to choose its own order for a common language. Decisions on how and what must be built have to be made by users, grouped into design teams so that each element can be designed. The specialist team must provide team members with the patterns, diagnosis methods, and all

additional aid needed for the design process. The time that the user group needs to design must be considered as part of their daily tasks. A 'finished whole' must be avoided since an endless number of small changes are needed, therefore creating growth in small doses. Every pattern must be empirically studied and discussed. The pattern list that is formally adopted must be reviewed by a public assembly. The specialist team, working with users, will prepare an annual diagnosis map for the whole community that has to be easily accessible by any person initiating a new project. The gradual attainment of goals requires a financing strategy and participatory coordination for the construction of projects proposed by users.

Alexander's participatory strategy is conceptually coherent and is based on the strength derived from the participation process. However, it does not seem to be practical in more complex social processes or away from areas defined by specific projects. Achieving a continuous, effective, and direct participation of citizens in the design and construction of their urban environment collides with structural problems that have difficult resolutions. What is generally understood as citizen participation refers not so much to the design process, but to shaping proposals through local leadership and interest group intervention. This process has to be guided by the mediation of the potential conflicts of interests between different groups, generated by plans and projects.

Not all individuals and social groups are able to actively participate in the planning process. A conducive environment for participation must be promoted for each case. Some authors have observed the conditions for effective citizen participation, summarised in the following points:

- Moral Cohesion among participating citizens guided by certain objectives. Group cohesion will permit the creation of an organisational framework.
- Capability of organisational behaviour. In general terms, the population's sense of belonging increases with income level, education, and political involvement.
- Leadership according to its 'expressive function'. The leader symbolises and expresses group values. The 'facilitation function' refers to the leader's executive function, requiring specific abilities and knowledge.
- Knowledge. The group's efficiency increases in the participation process when the majority of its members know what the debate issues are and have a precise idea of the appropriate means to achieve its goals.
- Conscience. Organised groups must be aware of the relationship between the goals they chase and the efficiency of the participatory mechanisms in order to achieve them. This awareness depends to a great extent on the education level and the participatory experience of group members.

These are clear conditions; however, they are not always present in complex societies. Achieving efficient participation requires encouragement supported by the necessary financial and human resources. Participation is costly and it demands a great amount of time for the teams in charge to conduct it. We know that growth in small doses allows the participation of citizens in the city's decision-making process. We know a common language is necessary and that this language must be established to solve design problems. We know there are criteria that we cannot always apply. The desire to place the focus on the citizen, not only as user or voter, but as responsible for the city's issues, is not always sincere. Participation must not be confused with propaganda or with the mere technocratic will for defending the experts' work. Nowadays, it is important to understand the construction of the city as a complex process. Democratic and participatory processes need to complement the traditional direction of hierarchical top-down planning with a bottom-up process stimulating society's capability to define its future.

## LOCAL POWER, DEMOCRACY, AND CITIZENRY

Participation in the planning process has led to consideration of new issues about urban governance and the construction of citizenship. Participation requires empowering people and adding pressure on the political system to achieve a greater level of citizen engagement with public affairs. It is obvious that there are a number of unresolved issues in urban societies. In urban areas where activities are increasingly decentralised, we can only observe the loss of people in specific places. The symbolic and significant value of urban spaces is downplayed, complicating collaborative relationships. As Paul Virilio claimed: "*There are two laws in urban planning: the first law is the persistence of the site. A city is never rebuilt in its outskirts. The second law claims that the more the place of inhabitation extends, the more the population unit becomes undone*".[113]

This lack of unity, not only due to distance but also because of urban society's own heterogeneity, hinders relationships among citizens. We should substitute the term 'people' for 'citizens'. Citizenship then means involvement in political organisation, civil society, and the shift towards the public sphere. According to John Friedmann, citizens hold an increasingly leading role in our society, thus influencing a new planning model: "New planning must be less corporate, more

engaged, less coded; it must be more participatory, linked more to projects than the whole system of relations of the city; it must seek consensus bounded by negotiated agreements and mediated between actors; and it must provide strategic information to all those participating in a planning process".[114]

It is within this conceptual framework that we should focus on the issue of good governance, the public-private cooperation within urban development, and the demand for a committed civil society. We believe that a good local government can only be achieved through a new balance of power present in cities. As also considered by Lynch and Jacobs, David Harvey talked about dialectic utopianism, defending that 'the correct urban form' must be linked to the common interest. Harvey claimed that a good city is one defined by its citizens. Who shall participate? Everyone who is interested (the stakeholders). Harvey suggested we should start off from a self-declared citizenry, one that is willing to participate and has a sense of belonging.

Another problem is that this participation has to develop in an urban reality that is constantly experiencing social change. A reality characterised specifically in mega-cities by ethnic and racial conflict, social segregation, the abyss separating the network society's corporate elite and the informal labour sector serving them, the gap between rich surveillance-monitored suburbs and crime-plagued declining neighbourhoods, the inequality between citizens and non-citizens, and disparity between a dominating culture and cultural minorities.[115] It is a multi-racial, multi-ethnic, multicultural reality city configured by a diverse society. From this context emerges a social diversity that must be understood and included in the logic of participation and the decision-making processes, if we wish to advance towards a more democratic, sustainable, and fair city.

The observation that a strong civil society is crucial for a strong democracy is attributed to Václav Havel. According to him, a mature civil society is the key to social cohesion and balance within the city. As mentioned earlier, the May 1968 events in France resulted in the emergence of an urban discipline characterised by the politicisation of town planning and the assertion of the 'right to the city'. Conflicts were interpreted as democracy's, and therefore also planning's, true pillar.

In the planning and design of future cities, in the context of complex multiculturality and profound social differences, we must listen to the 'voices from the borderlands'. These are different voices searching for new paths of action where diversity is the main operating principle.[116] These perspectives are unveiling a different work context. Co-operation amongdy all those interested in the urban development process and the commitment required from the town planner as mediator, begin where power is not applied autocratically and where protest is reoriented towards the rational defence of different positions.

'Tactical urbanism' has been promoted in certain places under new governance criteria. This relies on low-cost interventions based on more or less spontaneous collaborative efforts by citizen groups or small urban agents.[117] Many efficient self-regulatory social strategies, based on collaboration and not exclusion, exist in the city. Richard Sennett observed that besides imposed order strategies, disorder strategies have arisen. Spontaneous grouping and social coexistence have become regular.[118] In spite of social problems, these strategies have generated attractive urban living models. Lefebvre became interested in the daily living routines and social experiences that make up urban spaces, beyond the emphasis on conflict.[119]

In the last decades, the abundant literature on local power, democracy, and citizenry, have emphasised inequality issues and the conflicting conditions linked to the city's decision-making process. However, in spite of the imbalance and inequality of global society, cities are currently best placed to carry out strategies for improving people's quality of life, while facing both climate change and social integration challenges. We need to go beyond traditional urban planning. Expert town planners, working within local government and actively participate in the drafting of master plans by applying their legislation and technical abilities, will still be absolutely necessary. However, in a 'glocal' context, and considering the shift in scale to focus on the future of cities, we need a new generation of professionals that can operate in the link between local scale issues and international interaction opportunities for the cities. These professionals should be able to guide effective participation processes, as well as propose ideas and projects to achieve the balance between competitiveness, social balance, and environmental sustainability. They need to think about the future of the city through a social learning process, thus propelling collective learning.

## SMART COMMUNITIES

Let's talk about 'smart communities' to highlight the creative potential of local communities. In its effort to grow united, our society has rediscovered how the public sphere can find new forms of expression. Public spaces will be key, both in the physical shape of the future city, as well as in the re-composition of its collective identity.[120] The truth is that cities are extraordinarily diverse social complexes where tightly-bound groups coexist. These groups are organised in a quasi-tribal manner that follow protection logics which are opposed to the cosmopolitan and individualist urban dweller model, are tied to a nuclear family, and are vulnerable in spite of their position and wealth. As explained by Gillo Dorfles: "...the absence of cohesion between habitat and human being, accelerated as a consequence of nomadism and alienation towards the native land, has led to the decline in emotional bond for the landscape and the urban core...".[121] This lack of emotional bond is linked to the difficulty in finding commitment to active participatory processes. At the same time, we know that the participatory experience has survived in social movements because the achievement of common goals has provided the context for collaboration and group work.

Europe has a tradition of local and regional institutions committed to the management of urban issues.[122] In the search for a Welfare State – today seen as more controversial for its cost rather than for its need – the city's challenges have been tackled institutionally in a different manner by each country. In contrast, a strong and multiform structure of civil movements has been forged in the past decades in the United States. This structure has become a counter-power opposing the market's excesses and these movements have originated the most interesting urban experiences. These are civil society's shared efforts to turn the city into a more united social reality.

The concepts of community[123] and local identity have been associated with the recovery in the value of citizenry in an increasingly diverse and heterogeneous society. Emerging community-driven diaspora policies have appeared with transnational migration. These include immigrant self-organising processes in their arrival location, such as the two million Turks in Germany, Hispanics in North America, and others. The increase in conscience over social and environmental problems can represent a thrust for increasingly democratic planning forms.

The 'community planning' concept has responded to progressive planning efforts based on local communities, their interests, desires, and viewpoints. This implies using urban planning tools and techniques to counter proposals generated by governing institutions and private developers. 'Community planning' is not only an instrument against social exclusion or the forced displacement of a population, it implies an opportunity to enhance urban quality of life, program specific projects, and offers a guarantee for citizen participation in city-making tasks. As Tom Angotti observed, city-making needs both expert planners as well as citizens that learn by doing and are interested in adopting a broad range of strategies to improve the quality of urban life and eliminate inequalities inside every district.[124] This sort of urban planning aims to surpass the simple representation of citizens' interests as customers, and advocates inclusion in the planning process. Therefore, we require an urban planning and design process that demands leadership and the creative activation of local populations through the previously mentioned 'neighbourhood planning'.

In contrast, corporate planning such as the North American CID (Common Interest Developments), can be observed in many cities. These developments have calculated their success through rules that build up a certain 'lifestyle', varying in rigidity and broadness until they can exclude those who do not adjust to the requirements from their privatopias. This is the case for the gated communities, which have privatised urban spaces in a discriminatory manner under the excuse of the need for security.

At the turn of the century, the Village of Arts and Humanities in North Philadelphia exemplifies the use of creative actions to strengthen the community in one of the poorest urban districts.[125] Lily Yeh, a professor and artist, reoriented the original commission to build a park on a derelict lot towards collective action. Neighbours from this ruined and neglected district worked together in a forgotten area of the city to rebuild their community identity and create self-confidence through spontaneous artistic actions guided through workshops that allowed them to reclaim their urban spaces. Empty lots became small gardens, existing houses were improved, and murals were painted. Without pompous actions, a few seemingly-ruined blocks gained new meaning by using art as a tool to foster co-operation among neighbours and rebuild a sense of community. At a place where its population faces not only poverty but also crime and pollution on a daily basis, it has been possible to discover that, as a result of community effort, beauty can be used as a sign for hope. Through the Learning Through the Arts programme, 6 to 18 year-old youths became involved in extracurricular activities, such as scenic arts, field-trips, and activities with visiting artists. A broad scope of possibilities to develop individual talent and initiatives was unfolded. Lily Yeh,

of Chinese descent, found Jo Williams, an ill Afro-American neighbour, her first contributor. Together with her friend, James 'Big Man' Maxton, they made unique mosaics designed by the artist. They were a representative blend of people from different ethnic groups who knew, like many of their neighbours, that creativity can achieve things money cannot buy.

'Smart communities'[126] have been motivated by the idea of a creative community that understood their capability to generate social and economic development initiatives, create jobs, and increase the local quality of life. Such communities can emerge as a consequence of a public initiative or local associations believing in the collective drive to achieve their goals. Paolo Perulli expressed this clearly: "The important thing is (…) the capacity of local actors to develop cooperation strategies, mobilize dormant local resources and attract new foreign ones, connect one's city to the rest, plan development and communicate it".[127] It is society's own inner strength that establishes its potential. Florida tried to explain this with the 'creative class' concept, pointing out that at least 30% of the active population in North America has been devoted to the production of new ideas, new technologies, or new content. People working in engineering, science, architecture and design, education, the arts, and the entertainment industry can contribute to configuring their urban environment.[128] The traits of these creative classes are their independence, their acceptance of differences, and a non-conformist definition of their particular interests that values situations, places, and personal priorities above economic issues. They can accept risks while needing greater flexibility in decision-making. Their familiarity with new technologies and their connectivity are assets when expressing solidarity. The creative classes do not have to be targeted to the wealthiest part of society – the gentry – but to highly educated social groups conscious of community values. They get involved in specific issues, such as advocating for an excellent public transportation system or rejuvenating old neighbourhoods, as demonstrated by Seattle's restorative redevelopment that is capable of creating appeal in an innovative context. The emphasis on creativity is encouraging a new link between art and science, with increasing effects on education and industries. If this becomes fully ingrained, it can have universal effects on our society's innovation and positive transformation.

Planning has to give up the traditional technocratic model and be open to citizen participation, allowing for different ways to understand the city and its future opportunities. There is no contradiction between participation and innovation; quite the opposite. Nowadays, we can speak about an organisation's IQ and about accumulated collective intelligence. Urban planning needs to rely on each society's collaborative potential, fostering not only economic efficiency, but also the construction of a public sphere where the future of common issues can be contemplated.[129]

## LEADERSHIP AND SOCIAL URBANISM: THE EXAMPLE OF MEDELLIN

Participatory urbanism requires a different intensity in harsher urban circumstances, such as in Latin American cities, where it has provided valuable planning experiences in prioritising social goals. From the most recent urban policies in Medellin, we can recognise a positive merger between political leadership and citizen participation. Medellin's mayor's office named its broad and dynamic urban programme 'social urbanism'. The programme began in the 21st century and is directly aimed at improving the living conditions of its inhabitants, focusing specifically on the poorest urban neighbourhoods. The optimisation of available public resources for specific projects with outstanding architectural merit has contributed towards achieving these aims and to Medellin being considered an exemplary model. The scale of success has mainly been due to the original difficulties the city had to over come; it was considered a 'broken city' at the end of the 20th century, fuelled by poverty, spatial segregation, violence, drug trafficking, and the concentration of wealth by a very small elite.[130] Medellin's main strategy has been educational. Public spaces were recreated, providing infrastructure and neighbourhood facilities with symbolic value. New buildings have been key in the effort to rebuild a new urban image. The city demonstrated an improvement in quality of life by 23% between 2000 and 2010. This was measured by the improvement of housing, access to public services, social security, and education.

The architecture of the new neighbourhoods' cultural facilities has been widely acknowledged; however, the crucial improvements have to do with basic infrastructure, such as the programme aimed at guaranteeing 'drinking water as a vital minimum'. To achieve these goals, a number of diverse and complementary actions have been put into effect. Medellin's mobility policy demonstrates this. Conceived as the central strategy of urban transformation, it articulates a number of large actions, such as the new Metro; improving the space around the stations, the bus rapid transit, and tram; and an endless number of small actions that include new pedestrian walkways, and escalator sequences at hill neighbourhoods.

The conviction that accessibility is the main tool against spatial segregation has led to the construction of the so-called metro-cable, a gondola lift system that connects remote or topographically complex areas and makes them accessible. Connecting areas of a divided city and providing neighbourhoods with an innovative educational structure has been key. This has included new children's areas schools, and a public libraries programme. Libraries of sterling architecture, conceived as park libraries, became the new urban landmarks in the most fragile neighbourhoods and have provided these remote areas with a new centrality and image. Each intervention has aimed not only to provide a service, but also to improve public spaces and revitalise the environment. It is not the strategic and integrated urban projects which make Medellin special, but the broad group and regenerative potential of a group of actions distributed all over the city.

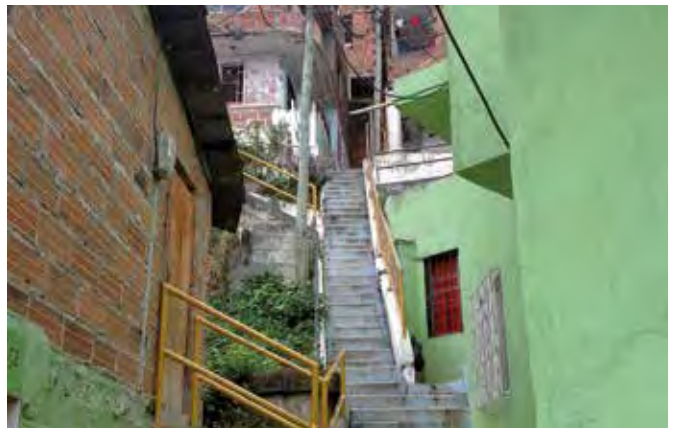
It is true that this is a top-down action, conducted by the local administration through pedagogical governmental action. However, it was aimed at creating a new context. Building confidence among the population and improving coexistence among diverse groups were the main goals. As we have seen, these were necessary conditions for citizen participation, impossible in a context of fear and desperation. Through simple mottos, such as for city mobility, for family living, for peace, and for coexistence, Medellin's town hall has been able to transform the framework of social reference by creating new dialogues and citizen participatory processes. Alejandro Echeverri, chief technology officer of the Integral Urban Project, recognised in 2010: "The path has barely begun and the city still faces structural problems in social inequality, accumulated historical debt, and deeply rooted violence".[131] The capability of maintaining long-term goals and not interrupting successful programmes has been the main feature of the political leadership, since it represents both stability and the will to improve. Both have been essential in generating trust among the population. Libraries, cultural centres, schools and public spaces, revitalised roads between neighbourhoods, and the social housing programme have invigorated Medellin. These have brought citizens closer together and fostered their self-confidence, feelings of belonging, and commitment to the city.

Another characteristic of Medellin's unique experience has been retaining its long-term vision and goals while reinventing itself with great impact through renewed projects and programmes. Specifically, in 2015, Medellin's vision to become a 'City for Life' was supported and shared





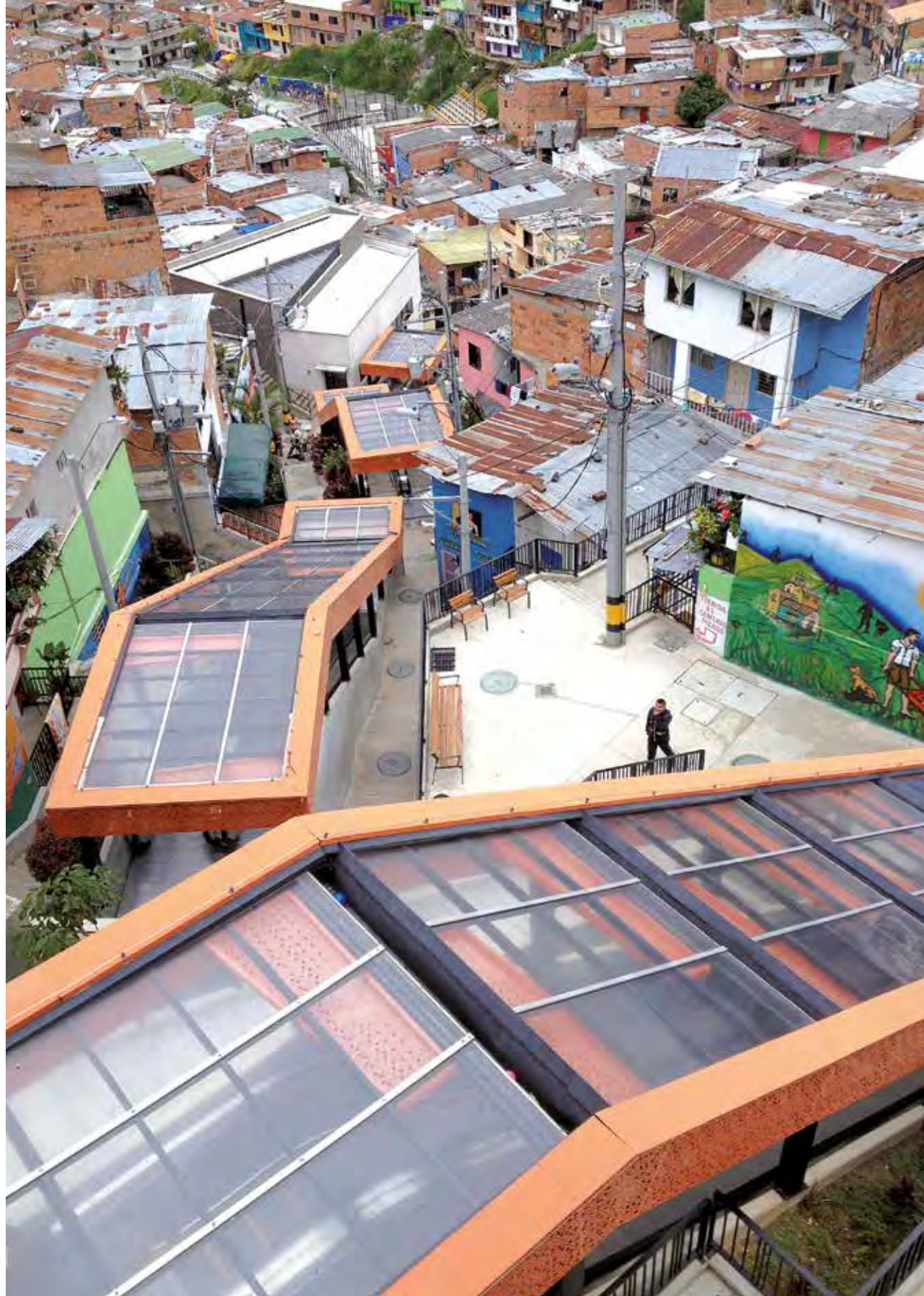





The Metro Cable and the "Spain Library" of Medellin. An integrated strategy for the recovery of problematic neighbourhoods through improved accessibility, facilities, public space, and social housing.

internationally. Life and equity concepts have inspired Medellin's destiny, and that of its citizens, as a city committed to innovation, participation, transparency, and anti-violence. Large-scale projects, such as Medellin's River Park, are currently being encouraged, aimed at returning life to the river and returning the river to the city and its citizens. The green rural-urban ring initiative, developed as a pilot operation in Commune 8 and aspiring to encompass an area of over 27,400 acres, has also been a very significant contribution. Finally, the Articulated Units of Life project has been creating and adapting sport, leisure, and cultural facilities to become meeting and exchange points which foster citizenship values within the different neighbourhoods of the city.

Medellin received Special Mention from the Lee Kuan Yew World Cities Prize in 2014 and 2016 for its spectacular transformation process and integral urban improvement from its extremely problematic urban and social conditions. The continuity in the city's goals and urban actions, regardless of different government officials, stands out. This exceptional situation in the Latin American context has been possible due to the close collaboration between Medellin's City Council and the Antioquia Department Government. The role of institutions and civil society has been very relevant for the fostering of international alliances and the continuity of collective projects, especially Pro-Antioquia and the universities that have actively participated in the strategic consideration process. Another relevant element for excellence is Medellin's public companies, which have very efficiently provided important urban services and offering basic support so that the city could dedicate its resources to the challenges of social urbanism. The quality of political and professional leadership that have participated in the transformation of the city should also be acknowledged. Medellin has been for many years, a 'city with a project', with well-defined priorities and guidelines, and it has been capable of collaborative efforts to gradually turn this vision into a collective project.



Urban transformation in Medellin has been exemplary for its social achievements. The Medellin giant escalators offer access to the city's most disadvantaged neighbourhoods.

# 05 CITY CENTRE RENAISSANCE

The rejuvenation of historic centres at the end of the 20th century has been one of the central themes of contemporary urbanism. The plan for the revitalisation of Bologna's historic centre was pioneering and innovative, inspiring a whole generation of international urban planners.

In the debate between tradition and modernity, the integration of new architecture in historic areas is still bound to the notions of structure, scale, and formal and functional adaptation, rather than figurative imitation of historic models. Peter Cook's biomorphic museum for the Austrian city of Graz is an extraordinary example of compatible dialogue.

Renewing life, energy, and symbolism of city centres is currently a critical issue both in Europe and in the United States, where the suburban tradition has weakened the role of the city's downtown. Bilbao's 'Guggenheim effect' cannot be translated into other cities merely by constructing an iconic building; it represents society's will for change, confident and determined that it is possible to reinvent and rebuild 21st century Bilbao over the ruins of an exhausted territory and productive system.

Many cities have promoted deep improvements by transforming public spaces. New York's High Line is an outstanding example of rejuvenation and the centre of Philadelphia became a great model through their creation of themed spaces such as the Avenue of the Arts and the Avenue of Technology.

# GIVING VALUE TO EUROPEAN URBAN HERITAGE
# THE ARCHITECTURE OF THE CITY
# BOLOGNA'S HISTORIC CENTRE MASTER PLAN
# NEW BUILDINGS FOR OLD CITIES
# THE GUGGENHEIM EFFECT
# RETURNING TO AMERICA'S DOWNTOWN
# AVENUE OF THE ARTS, PHILADELPHIA
# NEW YORK'S HIGH LINE



After the dramatic destruction of the Twin Towers, New York underwent an unprecedented urban renewal process. Ground Zero, the Meatpacking District, and the High Line are some examples of Manhattan's dynamic transformation.

## GIVING VALUE TO EUROPEAN URBAN HERITAGE

During the last third of the 20th century, the conservation of historic centres became a central theme of urban planning. Its significance lay not only in reclaiming the historic city, but also in its reflection of the concept of public spaces and quality of urban planning. In 1965, Charles Moore forewarned of a potentially bleak future in 'You Have to Pay for the Public Life', where public space was no longer free for all. At the same time, he praised the urban values of the mining town of Guanajuato, a beautiful city in Mexico's Bajío region, and today a World Heritage Site,[132] recognising that the city's past still plays a role in the present day.

This was not a new issue, yet it was not until 1960 that special regulations began to be introduced in Europe to preserve historic centres. Following the devastating effects of bombing during World War II, there was a growing awareness of the acute loss of heritage.[133] These first conservation efforts were a direct response to the necessary rebuilding of historic cities most impacted by the war: Coventry in England; Nantes and Saint-Malo in France; Regensburg, Dresden, and Nuremberg in Germany; and Warsaw in Poland. These were specific efforts where the motivation for imitative reconstruction was linked to that of mending ruined national identities. In other examples, such as Perret's designs for Le Havre, reconstruction was carried out using concrete and the introduction of modernist architectural styles.

The main precedents of the concept of urban heritage can be found in key figures of architecture and urbanism history. In 'The Stones of Venice', John Ruskin interpreted, for the first time, a complete city as a work of art. In 1849, with 'The Seven Lamps of Architecture', he condemned new interventions as damaging to the structure of ancient cities. Ruskin's renowned aversion towards restoration, which he considered ignorant and blind degradation, is captured here: "... (M)ore has been gleaned out of desolated Nineveh than ever will be out of rebuilt Milan". This aversion coexisted with his almost prophetic interest in domestic architecture and its role in shaping the urban fabric; the beauty of which is rooted in its continuity. Cities such as Venice and Oxford cannot simply be reduced to the sum of their great civil and religious monuments. Traditionally there have been two extreme positions in the debate around the transformation of urban centres. These comprise those who promote the replacement

of old buildings for functional reasons versus those staunchly advocating the maintenance of the historic city as an object of art, removed from everyday life. These views still exist and have led to many contradictory actions.[134]

Gustavo Giovannoni (1873-1947), a disciple of the restoration theorist Camillo Boito, aligned Camillo Sitte's ideas on the conservation of historic centres with a more general urban perspective.[135] Concerned about urban transformation dynamics, Giovannoni systematised the idea of urban heritage without abandoning the prospective vision for modern cities. He believed that old centres, their blocks and neighbourhoods, must play a significant role in providing space for daily life, be properly treated, and liberated from activities incompatible with their form, which could be located in new urban areas. In addition to being conserved as monuments, historic areas of cities could become the heart and catalyst of the cities' new spatial configuration. Conservation and integration are key for a dynamic urban heritage.

However, requirements and intervention criteria in historic centres have evolved in complexity. Conservation was just the first stage, culturally-driven and reliant upon the strengthening concept of restoration. It was the subsequent development of regulatory support for urban policies in historic areas, incorporating implications for property rights in a complex plot scheme that permitted broader social objectives. The first big effort was the 1962 French Malraux Law.[136] Neither Mérimée's classic French concept of the monument, nor the historique ensemble, were enough to prevent the decline of dilapidated neighbourhoods with historic and aesthetic merit. Malraux's Law aimed to provide these neighbourhoods with activity and increase their value, regardless of their loss of function. Until then, intervention in slums, insalubrious îlots, or sanitation areas, had involved demolition. Previously, Baron Haussmann had led the transformation of Paris with the expropriation of property and opening of streets, introducing a new network of avenues to the city. However, André Malraux would defend the law with the following statement: "In most of the quays of Paris, besides Nôtre-Dame, there are no distinguished monuments, their houses have no other value than the group they belong to. They are the privileged set for a dream Paris offers the world, and we want to protect these sets as much as our monuments. If we allowed these quays of the Seine to be destroyed, it would be as if we were chasing out of Paris the genius of Daumier and the shadow of Baudelaire. " The law focused on neighbourhoods and areas specifically designated as protected.[137] The effectiveness of the law in these areas eventually contrasted with excessive tolerance in unprotected spaces, with consequences that soon prompted the first critiques. However, this trend in marking the difference between protected areas and the rest has been maintained, linking conservation with the achievement of this protected status.

It was thus cultural logic which led to a general European consensus on historic centres. It also led to the creation of organisations such as the British Civic Trust founded in 1957 which endorsed 'conservation areas'[138] and the Civitas Nostra association, founded in Freiburg in 1963, that promoted a balance between different uses, inhabitants, and structures. In Italy, intellectuals advocated applying the monument concept to the urbis. The ANCSA (Associazione Nazionale Centri Storico-Artistici), founded in 1961 in Gubbio, Italy, and led by the urban planner Giovanni Astengo, influenced the Venice Charter and the government's perspective on restoration.[139] Some of its main promoters, such as Astengo, contributed to a broader vision for the historic centre. In his regulating plan for Assisi, he extended the principle of conservation to the natural and agricultural landscape, to coexist with an ambitious urban perspective for the whole town.

Since the approval of the Convention Concerning the Protection of the World Cultural and Natural Heritage in 1972, UNESCO has promoted the 'world heritage city' concept establishing a cultural approach to protection. Today, over 250 cities around the world in very different situations have benefitted from this status, turning heritage into an economic driver; through urban management guided by UNESCO's supervision and development criteria. In recent years, the task of assessing each city's intangible heritage has increased in difficulty, prompting the introduction of the 'historic urban landscape' concept in an attempt to preserve a coherent interpretation of the urban whole instead of only isolated monuments.[140]

From the beginning, conservation ran the risk of prioritising stones over citizens. In fact, many historic centre renovation plans have resulted in gentrification, which established housing for the wealthy and tertiarization through the development of luxury retail and office spaces in refurbished spaces. Camillo Boito considered the relationship between the city centre and affordable housing, pointing out that the house should be the essential monument of a democratic society. Giovannoni demanded specific housing policies and lamented the unfavourable transformation of the centre into a business and luxury housing district.

Nevertheless, this has been the tendency, increasingly influenced by tourism promotion policies and dominated by protection that relies on the nostalgic and













Fundación Metrópoli

George Town, located on the island of Penang, is becoming an international example of a historical centre trying to retain its cultural identity, whilst undergoing transformation.

utilitarian vision of the past, yielding a sort of 'urban illusion'. During the 1970s, in the midst of an economic crisis and stagnating urban growth, trivialisation and disregard for urban planning milestones inspired by the Athens Charter reached their peak. Urban planning, increasingly detached from architecture and overly concerned with zoning regulations and volume exploitation, had led to an irrelevant city, with segregation between the centre and the periphery. The historic city of the past had offered greater complexity and diversity than the rigid functionalist scheme. By then reclaiming the historic legacy, trust was built in urban spaces once again. Both the cultural debate and the experience in reclaiming Europe's historic centres have a long tradition and the results of these can inspire urban heritage restoration processes in cities on other continents.

## THE ARCHITECTURE OF THE CITY

Establishing the concept of urban heritage has required a new understanding of the historic city, especially focused on its physical form. First steps were taken in the field of urban history with early reconstruction attempts of the forma urbis.[141] The cartographic archives were used to answer questions regarding the shape of the city, demonstrating an eloquent plan for the contemporary city, while displaying traces of the past. Analysing the urban plan and its evolution allows one to reach a deeper understanding of the city, marrying its shape and memory. It is not just about protecting past heritage (the shape engraved in traces of old European cities), it is also about understanding the urban environment in all its richness and complexity.

Since the end of the 1960s, a morphological approach has emerged;[142] a trend developed by those who claimed that the physical shape is the most stable element in the city. While administrative, economic, and social circumstances have evolved, built matter tends to stay the same. The knowledge of the city's physical shape reveals the underlying historic structure and its 'laws'. This can therefore offer stable support to the different interpretations of the city.

The main precedent to this approach can be found in the works of Marcel Poëte (1866-1950), a pioneer of the French school of urban history. The titles of some of his works are eloquent: 'Une Vie de Cité: París, de sa Naissance a nos Jours' (1924-31) or 'Introduction à l'Urbanisme: L´evolution des villes, la leçon de l'histoire de l'antiquité' (1929). Influenced by biology, he describes the urban shape through its development over time, in other words

its history. Urban plans and their history occupy a central role in his method: a careful observation of the cities' plans allows one to distinguish the phases of its evolution, the meaning of the road network and the different buildings, as well as the features that best express complex urban features. Poëte devoted his life to studying Paris from his initial position as a librarian in the city's historic archive. At the Paris Institute of Urbanism, Poëte developed a different way to interpret the city, rooted in the historic and social substance of urban matter. This was a method continued by Gaston Bardet and others among his disciples.[143] Advocating for an urban art inspired by the study and observation of the city, he anticipated the goals and methods of what we today call urban analysis. According to this concept, the shape of the city starts to become the focal point of research, with its history acquiring special value as a resource for analysis and inspiration, a permanent reference in urban discussion.

The conceptual foundations for the recovery of the link between city and architecture rose out of Italy, the place par excellence of the historic city. The Modernist Movement had reached Italy in a peculiar way, amidst mistrust of many traditionally-rooted architects, both those opposed to and those linked to the new monumentality proposed by fascism. Figures such as Giuseppe Pagano, director of Casabella magazine, rose in the cultural atmosphere prior to the War, 'resisting' the regime's manipulations. His praise of humility laid the foundations for a sensibility capable of defending the country's cultural features and highlighting works that historic critics considered 'minor architecture'.[144] Since the early years of reconstruction, memory, context, and history are issues that have become ingrained in both the work and thoughts of a group of influential Italian architects.

Architectural academia has been significant in incorporating both traditional heritage and new architecture in defining the city. Ernesto N. Rogers, leader of the brilliant Milanese studio BBPR, accepted architectural functionalism while respecting the past. Tradition is the "common ground for opinions, feelings, and facts originating [from] a specific social group where the individual inserts his or her own thought and his or her own action".[145] Giuseppe Samonà (a member of the Istituto Universitario di Architettura di Venezia between 1945 and 1971) adopted an open spirit in the face of diverse trends, rooting practice in more solid traditions. To him it was the history of the city that placed architecture at the centre of the relationship between the past and the future.[146] Samoná strove to recover the 'large scale', insisting upon the value of traces and surveys, and of the essential structure of the Venetian landscape where Roman Centuriation (the Roman grid system) can still be recognised. However, it was Saverio Muratori who set the foundation for what has been called the typo-morphological analysis when he published 'Studi per una Operante Storia Urbana di Venezia' in 1959. He proposed investigating the city and its shape through the concepts of urban form, building type, and growth. He integrated architectural analysis and urban schemes in historic studies, which he defined as a history of construction. The built typology displays a close relationship with the site network, and the outline of streets and squares: "The typology is not characterised outside its framework, outside the built fabric. In turn, the urban fabric is not characterised outside its framework, outside the observation of the urban structure as a whole. The study of an urban structure can only be conceived in its historic dimension, since its reality is based in time through successive reactions and developments deriving from a previous situation".[147] The building has no meaning as an isolated element within the city, where historic transformations are discovered in its environment. The identity of urban matter, among other explanations, can be understood through the relationship between the building and the urban fabric. Building typology represents a precise relationship between individual work and collective history, suggesting a social background to the analysis. The forma urbis then can be understood as the life structure that unveils the true nature of urban spaces.

Architecture has its own tool, namely the analysis of architectural typologies and their relationship with urban morphology – to understand the structure of the city and both its static and dynamic features. This new disciplinary tool was first applied in the plan for Bologna's historic centre and it soon spread throughout Europe to recover the values of the historic urban form and the pre-existing social space. Morphological studies explain growth and urban change, offering a global vision of cities over time, detecting the 'remains' of the past and accounting for memories of places through their architecture.

In Aldo Rossi's influential text for architecture during the second half of the 20th century, 'The Architecture of the City' (1966), he questioned the relationship that exists between singular urban features and their architecture.[148] Architecture and urbanism are part of the same craft. The city must be understood in terms of shape, meaning, and architectural content, and not be removed from events in history, society, and the economy. Some buildings might be called primary elements, for their permanence and central role in the urban fabric. However, there are also functions that remain over time, reinterpreted differently, while maintaining their public character; keeping their ability to hold diverse

functions, independent of their shape, such as Rome's Foro Boario or Padua's Palazzo della Regione. The ambivalence in the function-place and function-form relationship is key to understanding historic matter in the city, displaying an ancient logic for the reuse of space. Rossi posed epistemological questions: how does architecture learn, how does it act? He turned to the 'Analogue City' concept, citing 'An Imaginary Venice' painted by Canaletto and commissioned by the wealthy Algarotti in 1744. A virtual Palladio enlightens the hypothesis of an autonomous design rule combining pre-existing materials and places, yielding a 'timeless' result. This shift allows us to consider architecture independent of any local determinism. Rossi felt that there is a wise game played by urban memory, a game both subjective and detached from arbitrariness, since it is informed by the real urban context.[149]

Urban analysis based on morphology, was thus established as the stage preceding the master plan. An unprecedented effort in the study of the history of the city had been displayed, allowing for the development of a new way of looking at the city. It was not an exclusively Italian theme. The British housing ministry, for example, in 1966 commissioned conservation reports for Bath, Chester, Chichester, and York in preparation for the 1967 Civic Amenities Act. One of the authors, Colin Buchanan, suggested a systematic analysis of the urban form for historic centres: detailed studies for uses, building conservation conditions, historic and artistic values, free areas, urban scenes, and traffic for every site. The concept of the urban form, through strata or superimposed and juxtaposed against historic layers, is relevant as cities have been built over themselves. Characters, histories, societies, and events have all combined to shape the city.

## BOLOGNA'S HISTORIC CENTRE MASTER PLAN

The Italian 'urban morphology' idea was systematically applied for the first time in the Plan for Bologna's Historic Centre. In this case, urban analysis provided a broad assessment of the inherited city, considering that the whole 'built heritage' was not only a cultural asset, but also an asset with social and economic value. The shape of the city was reassessed and the interests profiting from the destruction of what was built were condemned. The historic urban fabric cannot be reduced to a commodity; reclaiming it is an exercise in austerity, denying squander.[150] Housing was affirmed as crucial for historic centres as demonstrated by typological analysis. The analytical rigour and quality requirements for housing space expanded to the periphery and the larger city. Restoration was not the only focus, rehabilitation was introduced, aimed directly at turning the old city and its buildings into habitable spaces crucial for the whole urban compound. Reusing buildings became a recurrent theme in the deep critique of predominantly urban development ideas. This purely expansive urbanism was allied with destructive urban renewal, a criticism close to the concept of the 'right to the city'. All these issues were reactivated in the first years of the 21st century, in relation to the sustainability of the urban model and emphasising urban regeneration strategies.[151]

In 1965, urban planner Giuseppe Campos Venuti, a city councillor in Bologna, commissioned the University of Florence, under the direction of Leonardo Benevolo, to prepare a detailed study of the historic centre. The study was followed by a conservation plan coordinated by P.L. Cervellati[152] who was familiar with the urban analysis works of Muratori and Astengo, both of whom he was also close to. Completed in 1969, the master plan for Bologna's historic centre was published as an exhibition, the catalogue of which has since been broadly disseminated. The historic centre issue transcended its typically cultural focus: presented as a challenge affecting the territory's future, and the very essence of the existing city. A detailed analysis of all urban variables, with permanent reference to their historic origin and the social substratum, supported the effort to showcase this historic space of over 600 hectares. The wealth of information in the plan was a consequence of the efforts to document all details. The plot map was the element structuring all information in a series of plans that have allowed us to observe the spatial nature of the analysis with understandable logic. The vast collection of Bolognese ecclesiastic and civil archives provided extraordinarily valuable information for the plan. The typo-morphological analysis relied on historic material, and provided an integrated and attractive vision of Bologna's exceptional historic core. The plan considered monuments as inseparable from their surroundings, as well as from the historic spirit of these places. The sventramento technique, or destructive vacating of the historic fabric to facilitate typological renovation, had to be substituted. Diradamento was proposed, a cleansing method capable of eliminating false additions, degradations, and inappropriate renewals. This method would cleanse and rehabilitate historic urban areas and recover the original structure, was less dense, and linked to the logic of housing. Recovering its own order and setting up a coexistence between new and old, was what Geddes had already coined as 'conservative surgery' – a non-aggressive surgical method of intervention in the city. This is where the

problem of the suitability of modern architecture in historic cores found its theoretical solution: acupuncture or surgical action versus urban renewal.

The plan's support by local urban social movements generated new interest around how architecture could contribute to the city, thus establishing an alliance between culture and urban policies. The analytical substratum of Bologna's Historic Centre Plan was key to integrating new architecture. The 1973 'Legge sulla Casa' allowed affordable housing institutions to allocate funds to repair dilapidated neighbourhoods. In fact, a plan to build affordable housing in Bologna's historic centre was developed that year, activated through a fund traditionally used to build public housing in peripheral districts. Public funds for the construction of affordable housing were invested in the refurbishment of whole buildings and blocks, applying a typological method and a renewal strategy perfectly explained via axonometric drawings. Only a couple of relevant interventions were completed. However, the intervention method had great impact and it is still in use today. Examples of its influence can be found in the work of the pioneering office involved in the intervention of Rome's historic centre, directed with great vigour by Vittoria Calzolari between 1978 and 1981, or in the historic centre rehabilitation agencies created in Spain during the 1980s.

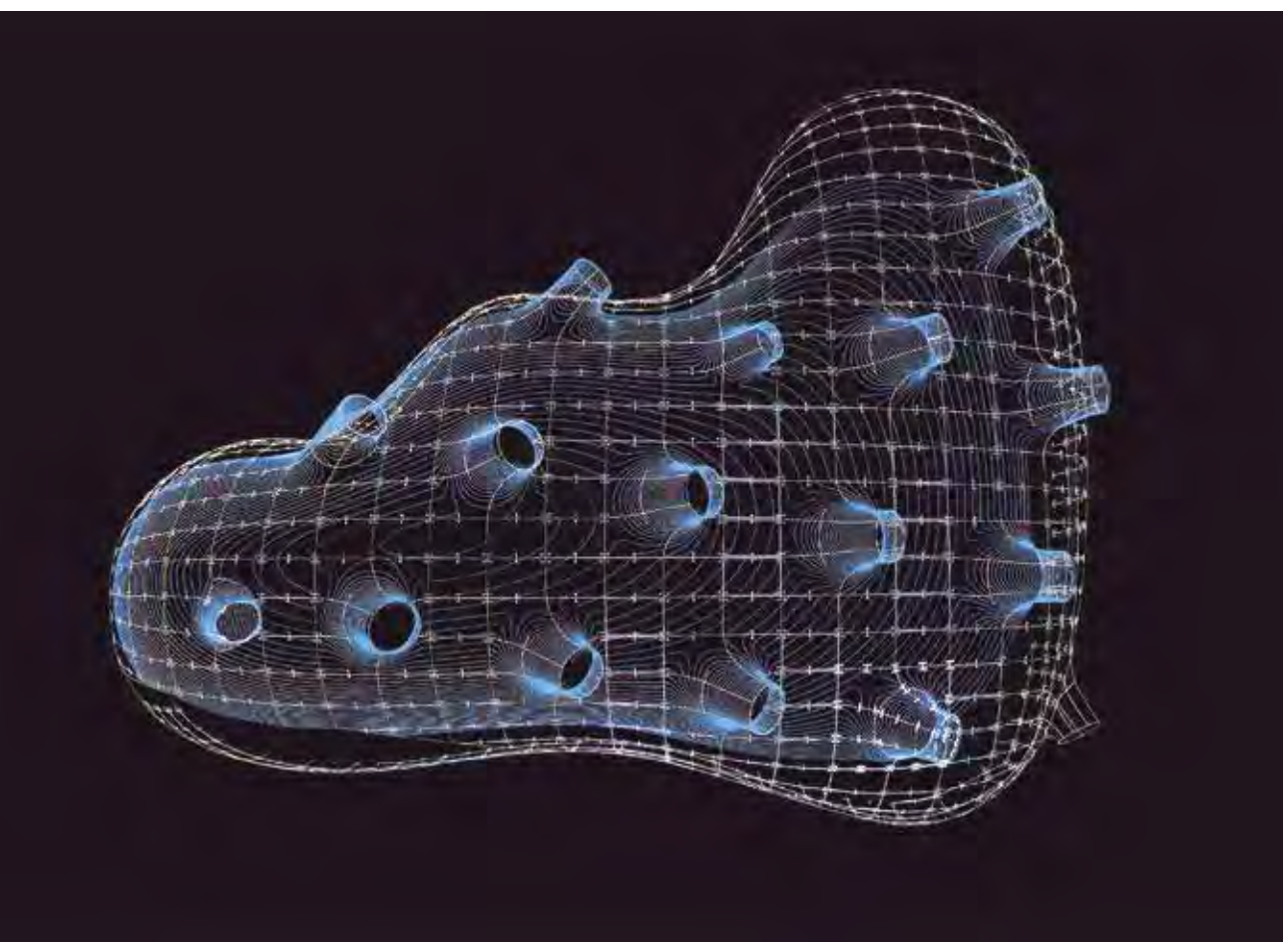
The 1972 'Carta del Restauro' incorporated the experience and methodology that originated in Bologna. The historical-critical interpretation was the starting point of the historic centre conservation plan, aimed at identifying urban, environmental, typological, constructive, and other attributes currently considered essential for the refurbishment of our historic centres. However, from an urban point of view, what makes Bologna relevant is that the historic centre's reassessment was followed by the re-evaluation of the whole city, including its periphery. Under the direction of Campos Venuti, a new master plan replacing the one from 1955 was approved in 1970. This plan led a reformist urbanism capable of overcoming a phase exclusively focused on growth.[153] The conservation of the historic centre was consolidated within an urban policy framework aimed at controlling real estate speculation. The concept of conservation was also expanded to the whole territory, including its natural and rural landscapes. Positive aspects of functionalism were also recognised in at least three of the plan's strategies. Following the recovery of the historic centre was a park plan that, under the 'urban green' title, defined land assignments in new urban developments. A review of urban mobility with the ring road project and the creation of a new external directional centre linked to a fairground was an innovative strategy to balance use within the city. The fact that the same administration protecting the historic centre promoted an international competition for the fair venue, aimed at regulating urban expansion through modern architecture, demonstrated that it did not follow a strict conservation logic. This was fully consistent with Bologna's historic centre still being the city's heart. The urban culture initiated by Astengo was thus put into effect, viewing the whole territory and anticipating its environmental and landscape values. The historic centre issue is not a closed topic, it continues to demand study and creativity. The proof is in Campos Venuti's subsequent reflections, which considered not only achievements, but also what was lacking in the scarce amount of refurbished housing, and the loss of the historic centre's residential profile. Campos also acknowledged the lack of foresight concerning the marked increase in private vehicle use and continued to assert that historic areas should host strategic functions in the future city.[154]

## NEW BUILDINGS FOR OLD CITIES

If we visit the Austrian city of Graz, we will witness with astonishment a metallic blue, porous bubble rising over its preserved city centre. This new museum of modern art was designed by Peter Cook, an established architect known for his theoretical concepts linked to Archigram and his extensive academic work. Torres & Martínez Lapeña's semi-open, terrain-adapted escalator at the edge of Toledo's historic centre, is not quite as dramatic but is still eloquent. This marked a shift in ideas and intervention policies for historic centres, allowing for dialogue between advanced contemporary architecture and protected heritage, even while conservation discourse remained dominant.

The revitalisation of European historic centres today is a fact. We can speak about urban successes where we find continuity in conservation activities and a creative reassessment of historic centres. Walking the streets of Spanish cities such as Girona, Santiago, Salamanca, Granada, or Vitoria is today a gratifying experience compared to 30 years ago. The same goes for other countries. However, the superficial implementation of typo-morphological studies has favoured a mostly cosmetic intervention. This is a simplistic vision of the historic centre's urban plan, diminished to a catalogue document and an aesthetic control guided by imitative tendencies. Conservation strategies are not enough. There are still unresolved issues and conflicts where the historic centre has maintained its functions within the urban centre. The old and new coexist in the city; in accordance with what history considers valuable and what is deemed interesting for the future. History does not offer answers for the future. Giovannoni's





Kunsthaus is a building designed by Peter Cook and Colin Fournier in the Austrian city of Graz. Understanding the scale of the building allows for intelligent integration on contemporary architecture within the historic city.

argument, namely new buildings for old cities, points out two unresolved issues: what type of architecture should there be in historic centres and what functions should historic centres assume within the city as a whole.

Since its 'origins', modern architecture has been able to interpret the 'environment' or 'genus loci' concepts without mimicking historical styles. Vienna's Post Office building designed by Otto Wagner, the extension of Gothenburg's neoclassical City Hall by E.G. Asplund, and the residential building with a retail ground floor built by Adolf Loos in front of the Royal Palace, at Michaelerplatz, Vienna, are classical examples of a 'modern' building in the context of an historic urban environment. Let's not forget the controversy they stirred at the time. Loos defended himself by arguing that his inspiration came from local masters. Meanwhile, his work was publicly derided, even by the Emperor, who decided to change his route from the palace in order to avoid a disaster. And if it is true that new architecture imposes itself in many contexts, it is also true that it does so with greater ease in the extension of existing cities. Such is the case with Berlage in Amsterdam, Dudok in Hilversum, Saarinen in Helsinki, or Zuazo in Madrid. We could take a very special tour of modern architecture projects that have been denied for administrative reasons. Unbuilt projects in Venice stand out in this examination: Villa Maiseri designed by Frank Lloyd Wright over the Grand Canal, Le Corbusier's horizontal hospital overlooking the Laguna's interior at Cannaregio, and L. Kahn's auditorium at the Biennale space. This is not the case for Gardella's housing at Giudecca Canal, simultaneously Venetian and modern, or Aldo van Eyck's brilliant Hubertus House for single mothers in Amsterdam's neoclassical expansion. We might conclude that it is not the figurative elements, but dimensional and structural (and therefore, typological) elements that have determined the integration of new architecture in historic spaces. The dialogue between new and existing is still rooted in notions of structure, layout, and type, in the adjustment of scale and dimension of the new, and in its formal and functional adaptation, rather than mimicking aesthetic models from the past. Thus, Peter Cook's biomorphic museum offers a lesson in dealing with scale, a true model of dimensional restraint in a complex environment of diverse historic architecture.

However, the integration of new architecture within the traditional urban fabric remains debated, especially in relation to strategies for systematic reuse of derelict urban spaces, the conservation of historic buildings, old factories, or

port warehouses. These themes allow us to consider the urban form, striking a balance between urban conservation and new developments. These issues arose in Europe, at London's Docklands, the 1992 Barcelona Olympics, and in Berlin as the capital of a unified Germany. These examples show complex sequences of plans and projects, management, and dialogue between different perspectives, leading to the modification of goals and identification of new paths towards consensus. In these large urban projects, built architecture speaks less about its authors, and more about society's expectations of its grandeur and contradictions. Economic prosperity obviously encourages the regeneration of underutilised urban areas or areas neglected by the productive system. However, attention was also focused on areas with untapped potential including waterfronts or, at the dawn of landscape urbanism, public spaces and interventions concerning new systems of parks and gardens. The extent of the interventions combined rehabilitation with traditionally expansive urban logic. This is an 'inner periphery', where the echo of the historic city prevailed due to solid quality requirements.

Urban heritage conservation policies have advanced greatly, incorporating sophisticated catalogues and relatively operational protection regulations. However, the debate remains on issues such as the revitalisation of historic centres and their inclusion in the urban system, as well as accessibility, mobility, urban structure integration, maintaining economic activity, attracting population, and the improvement of infrastructure. Historic centres continue to be complicated spaces where urban centrality and heritage conservation seem incompatible. Efficient urban management requires broad and sincere participation, as well as consensus-building. Incorporating a strategic vision has resulted in important advances. The success of comprehensive rehabilitation, not only in spaces with historic value but in general, relies on stable management tools. Institutions with broad operational capacity, important technical support, and that represent all stakeholders, enable participation with different levels of administration and coordinate public investment in matters of urban transformation. Well thought-out operations are necessary, combined with short term public investment actions within broader strategies. The best-conceived operations to catalyse private regeneration initiatives combine short-term direct public investment with broader strategies and action plans to achieve a certain 'critical mass'. Improvements in financial and tax conditions, as well as technical assistance for stakeholders in need is easier if there is a shared urban project. Innovative urban regeneration experiences have introduced careful marketing and communication strategies to involve stakeholders and encourage citizens to build ownership. Involving citizens and institutions during the early stages of an urban plan or project is ideal. There is certainly a recent change in attitude as collaborative intervention methods have emerged, especially in cities that have a stronger identity, leadership and resources.

## THE GUGGENHEIM EFFECT

Some cities demonstrate that the historic centre transcends conservation or patrimonial considerations, namely that the perception of them as museums cannot prevail. Historic centres must play a key role in the future of cities, with each having a different role in the city as a whole.[155] Historic centres are not all equal, not only because of differences in forms and functions, but because some include relatively newly built areas. This includes urban areas such as expansion districts, and relatively homogeneous cores from the early 20th century, such as those linked to the Garden City movement, early examples of social housing, and industrial estates.

Bilbao provides an example of the many challenges and expectations of European historic centres, including conflicts regarding goals and planned transformations. Although Bilbao's Guggenheim Museum could be considered the representation of urban transformation of this city, there is no 'Guggenheim effect'. Instead, there has been a widely agreed upon long-term urban action plan that combined a broad range of goals and strategies, and was led by the city government. The 'Guggenheim effect' happened neither by chance nor fate, but was the result of a well-conceived, long-term city project.

Bilbao has a unique urban history, influenced by specific events. These include its medieval settlement, its importance as a port, its stagnation during the Renaissance, its narrow-minded enlightenment, the emergence of modernity with the industrial revolution, a post-war period with an expansive industrial economy, and the tense last decades of the 20th century in search of a solid and prosperous identity. Today, Bilbao's urban centre, shaped by its historic spaces, catalyses and directs the lives of over a million inhabitants in its metropolitan area, formed by a heterogeneous group of dynamic municipalities.

Bilbao's Casco Viejo (Old Town) is situated within the original area of the Villa de Bilbao, which we can easily trace today.[156] In the 20th century, the Casco Viejo was a popular space; a city neighbourhood that, despite its heritage, deteriorated when central functions were relocated to other sites around the city. Rehabilitation was effectively approached during the 1980s, after the floods






suffered by the city in 1983 caused the destruction of buildings and commercial spaces, an urban transformation. The Casco Viejo was declared an Integrated Rehabilitation Area and a special rehabilitation plan was drafted. A public company (SURBISA) was created in 1985 to manage the intervention.[157] Public investment prevailed in the intervention, maintaining the popular features of the space that were linked mainly to commerce, but also to tourism, hospitality, and culture. Interventions were carried out in significant buildings such as churches, palaces, museums, the market, and at the Arriaga theatre. Simultaneously, a parallel process of intervention in public spaces and subsidised rehabilitation of private buildings was developed.

The rehabilitation works were carried out by the city council so efficiently that most buildings were improved to some degree. The Bilbao of the seven streets and the new square, of Arenal and Volantín Boulevard, were returned to their original splendour. From the Market to the University of Deusto, the right bank of the river comprises a stately urban façade that does not interfere with the Ensanche's central function in Bilbao's urban life. As in other successful historic centre rejuvenation programmes in Europe and elsewhere, the public transport strategy improving Casco Viejo's connectivity with the whole metropolitan region through metro, tram, train, and bus, was essential.

The left river bank precinct had been occupied by activities linked to industry, the port, and rail. The Ensanche, the heart of the metropolitan city, now looks inward towards the Gran Via that hosts a series of grand buildings. A maze of factories rises on the first river terrace connected to the Nervión River and its small tributaries. The river's right bank reaches the sea at Getxo, a traditional residential area for the local bourgeoisie, while on the left bank, behind the industrial area, the workers' of Bilbao spread over the hillsides of Baracaldo, Sestao, Portugalete, and Santurce. We can speak of a medieval Bilbao, a mercantile Bilbao, a popular Bilbao, a bourgeois Bilbao, and a working Bilbao. These are socio-economic images of the city built at different rates throughout history. The deep industrial crisis and the resulting restructuring after 1980 generated great uncertainties during those years.

It is true that architecture plays a role in urban renaissance and is being used to lead it. In that sense, Bilbao is an exceptional case, with the Guggenheim Museum being masterfully placed by Frank Gehry in one of the most difficult and dilapidated areas beside the Nervión River. The re-industrialisation process posed great challenges, requiring long-

The Guggenheim effect in Bilbao can only be understood for its continuity in urban management and its exceptional process of permanent planning and design.

term strategies enthusiastically embraced by society to address the social and economic problems. The great projects developed in Bilbao's existing urbanised spaces served this purpose, limited as they were by the impossibility of peripheral expansion due to topography. These projects were concentrated in the backbone of the metropolitan area, the precinct defined by the river, and at the heart of the former industrial area. As noted earlier, Bilbao's Casco Viejo was the subject of the first large-scale urban action rooted in the concepts of refurbishment and rehabilitation. Bilbao's Ensanche, the directional centre par excellence, also experimented with large-scale functional adaptation, especially in the recovery of the Nervión river-front, the Abandoibarra space where the Guggenheim Museum and the Euskalduna Auditorium were built, and recently the new centrality around the Iberdrola tower over the former railway, warehouse, customs, and shipyard sites.

Some claim that the encounter between Bilbao and Guggenheim happened by chance, but it was because Bilbao had an open mind towards innovation. From an urban planning viewpoint, Bilbao was exemplary in deploying all available urban planning tools including a master plan and special plans for historic or unique spaces. Bilbao also used regional planning Land Use Guidelines such as the Metropolitan Bilbao Partial Territorial Plan, Society for the Rehabilitation of Bilbao, and the Bilbao Ria 2000 (a public company responsible for the urban regeneration of Metropolitan Bilbao). Even forums, like the Bilbao Metropoli 30, have played a major role in defining the strategic plan for the city and shaping its global repercussions. The transformation of Bilbao emerged through a joint effort by the city council, Bizkaia council, the Basque and central governments, and civil society. As we can see, there has been an effort to rationally plan and face the future, although the press and the public have focused on architecture, specifically the Guggenheim.

Bilbao's 'Guggenheim effect' cannot be replicated in other cities the mere construction of an iconic building. The 'Guggenheim effect' symbolises society's will for change, the trust and determination that it is possible to reinvent and rebuild 21st century Bilbao over the ruins of an exhausted territory and its productive system.

It is important to acknowledge what has happened in Bilbao since the mid-1980s. This began with important urban transformation projects in the urban centre, which gradually spread across the whole city.[158] This emerged from the desire to provide Bilbao with a great cultural facility in the Alhóndiga, within the Ensanche. Architect Sáenz de Oiza and sculptor Oteiza came together to create the 'cube', a great space for culture constructed over an old building. However, the heritage status of the building stirred local and institutional controversies, which delayed the project until it was later revived by Philippe Starck's design. Today, it is a vibrant leisure and cultural centre. Another great project on hold was the transportation interchange at Abando Station, initially designed by Stirling and Wilford. It highlighted the strategic relevance of Bilbao's rail and metro. Projects that did materialise were proposed towards the end of the 1980s, and during the 1990s: the new Metro designed by Norman Foster's winning entry, which is now operational; the expansion of Bilbao's Port (Super-port) that freed space in the river; the airport designed by Santiago Calatrava; the extremely important Barakaldo central programme, which included a spectacular convention centre; the new football stadium inaugurated in 2014; and the new access to Bilbao that eliminated Sabino Arana Avenue's elevated section.

The Abandoibarra project designed by Cesar Pelli has been essential to the recovery of Bilbao's central areas where the Guggenheim Museum and the Euskalduna Conference Centre and Auditorium stand out. Abandoibarra today is an integrated space that includes housing, hotels, shopping centres, and university facilities around a landmark tower hosting Iberdrola's headquarters. However, the radical transformation of urban transport, such as the adjustment of railway stations, elimination of barriers, burial of urban sections of railways, development of the metro, and introduction of the tram, has allowed for coherence in an exemplary urban renovation process. These large infrastructure projects set the foundations for Bilbao's urban transformation and have fostered a multitude of smaller-scale projects and general improvements in public spaces. This has been a well-conceived and co-ordinated regeneration process. In this context, the environmental recovery of the river and the purification of its waters have been critical in making Bilbao's urban renewal, environmental improvement, and economic revitalisation possible.

To a large extent, Bilbao's urban transformation has been possible thanks to the management work carried out by the publicly-funded venture Bilbao Ria 2000. This is a joint venture, with 50% of the funding from the central government and 50% from Basque institutions, the Basque government, Bizkaia regional council, Bilbao city council, and Barakaldo city council. Bilbao Ría 2000 was designed to lead Bilbao's urban transformation and discover an appropriate purpose for the large amount of public land released by the Nervión River. The institutions involved were represented at the highest level in the venture's board of directors, guaranteeing its credibility and efficiency. The access to strategic

land in Bilbao's centre owned by its partners and the ability to reach agreements, have made possible the realisation of complex projects and obtaining important funds to develop large-scale infrastructure.

Bilbao's new metro, an exemplary public project, has provided great accessibility to the central areas of the Ensanche and the Casco Viejo, but above all, it was the first step towards strengthening an urban image of extraordinary modernity. It is an efficient metro in a linear metropolitan environment. What we see today in Bilbao is the result of a great transformation, boosted by the reuse of the immense abandoned areas of the port, railway, and industry, with key structural actions and other projects activated by the different stakeholders involved. This rebirth, beginning with the model recovery of Nervión's shore, bordering the Casco Viejo and the Ensanche, is a world-class urban adventure that has awakened tremendous interest. Almost all medium and large European cities have been subject to relevant transformation processes. In this context, the Bilbao experience has become a valuable example. Bilbao was selected in 2010 to present its transformation experience at Shanghai's World Expo, showcasing its 25 main transformation landmarks under the motto 'Bilbao Guggenheim ++', highlighting that it is still an open project; the city refuses to be complacent and keeps thinking about its future from an innovative point of view. This is a future Bilbao keeps rethinking in a changing context. It integrates new projects such as BAD (Bilbao Art District) between Gran Via and the Nervión River, and includes projects for the entire city, such as the aforementioned Neighbourhood Hearts project, which aims to achieve a complete city beyond the traditional centre-periphery schemes. In terms of the metropolitan space, the Bilbao Next initiative covers a city-territory project that is over a 45-minute isochrone from Bilbao's Centre which serves 1.5 million inhabitants. This project, an alliance between the Bilbao and Bizkaia councils, aims to position this functional area within the international context as a mid-sized city, and as an economic engine for Southern Europe. The transformation effort was recognised by the Lee Kuan Yew World Cities Prize, awarded by Singapore's Government to Bilbao in 2010.[159] Physical transformation and strengthening the knowledge economy will be key for the future. Educating, retaining, and attracting talent within an innovative environment around certain emerging economic clusters will allow Bilbao to keep leading.



## RETURNING TO AMERICA'S DOWNTOWN

Historic centres are part of the res publica that shape public interactions in the city, as well as form nodes for urban interests and spaces where diverse activities concentrate and generate all manner of exchanges. This vision is sought by North Americans through the urban revival of downtown areas, now considered desirable.

The traditional city always had its advocates, such as Jane Jacobs or Lewis Mumford, who pointed out the advantages of old and dense neighbourhoods; derived from their visual richness, vitality, sense of community, and even economic health. The first studies on the urban image developed by Kevin Lynch observed the 'traditional space'. An analytical method was slowly developed to interpret the urban matter, striving for the quality of the European historic city. Jane Jacobs stated that "cities need old buildings so badly it is probably impossible for vigorous streets and districts to grow without them. By old buildings I mean not museum-piece old buildings, not old buildings in an excellent and expensive state of rehabilitation – although these make fine ingredients – but also a good lot of plain, ordinary, low-value old buildings, including some rundown old buildings".[160]

However, for a long time, the predominant urban policy in the United States was one that turned the urban centre into a downtown office space, with a stark urban renewal logic that destroyed many pre-existing urban nodes. The mercantile transformation logic of the business city, present even in institutional buildings, was radical. This was evident in several cities with European-style centres such as Boston, where the Civic Centre built in the 1970s actively contributed to the rationale for destruction. Some pioneering conservation efforts, such as Boston's Quincy Market or San Francisco's Ghirardelli Factory, started to consider not only the rehabilitation of certain buildings, but also the opportunity to introduce hybrid functions in downtown areas, fostering retail spaces and restaurants. The debate it generated, which can be seen in the literature, was intense and interesting. A pedestrian revolution[161] began and the suburban model was questioned, stemming from the critique of the irrational invasion of cars and highways into the city and the territory. The criticism of individualism in a society unable to identify with public spaces also arose, together with a criticism of the destruction of community and civic relations in cities dominated by economic logic.

The truly pioneering and comprehensive accomplishment, however, was the regeneration of Baltimore's interior port. This was an initiative led by successive mayors, including the charismatic Mayor Schaefer, who could finally implement it with important public funding and investment from entrepreneurs. The first land-use scheme was designed by famous town-planners Wallace and McHarg (WMRT Studios) from Philadelphia, who were closely linked to the University of Pennsylvania. Work started in 1964 and lasted until the 1980s. It aimed to create a vibrant urban centre out of a derelict area – the old Inner Harbour and its neglected docks. This was, in fact, where the city originated. For the first time, the renovation process was based on a mixed plan incorporating not just office spaces, shopping centres, parks, and public spaces, but also hotels, restaurants, and cultural facilities (an aquarium, convention centre, science museum, and refurbished antique ships). The programme took a strategic approach that began with selected projects to make the seafront accessible, an action that strengthened local identity by reconnecting the city to its historical roots. This was a unique situation from a planning perspective. In addition to the tenacity of David Wallace, Ian McHarg's environmental arguments on the revitalisation of the urban centre as opposed to suburban sprawl had a clear influence. It is also an example of continuity in planning work, despite criticism and possible conflicts, for the revival of downtown areas.[162]

Towards the end of the 1960s, WMRT developed the first proposals for Lower Manhattan, in a riverfront regeneration process that led to the renowned Battery Park Plan in 1979. Another example is the regeneration of Fulton Market at South Street Seaport, New York, which maintained the building and restored the ships. The United States started the trend of recovering waterfronts, which has become one of the central themes in urban revitalisation in recent history. An endless list of cities – Amsterdam, Buenos Aires, Barcelona, Genoa, Bilbao, Singapore, and Yokohama – have transformed or are transforming their port areas, reclaiming waterfronts that have long been hidden behind port warehouses. We are beginning to replace former industrial spaces with leisure spaces, which could be used by the knowledge society of the future.

In Baltimore, where the ubiquitous modern-day coffeeshop culture started, a similar urban renewal process is happening. However, the process is imperfect; Baltimore still remains a dual city containing semi-neglected spaces and homeless people. As David Harvey pointed out when he lived in the city, this yuppie utopia is supported by a model where the public sector covers risks and the private sector collects profit.[163] However, if we consider its long-term impact, the renovation of the 'inner harbour' has been a successful project benefitting the whole city. Ultimately these unique, successful projects should not make us forget to address inequality in the contemporary city. The environmental factor too has played an essential role in the renaissance of American city centres – a rebuke of the car-based suburban model – where living in the dense urban centre is now perceived by some as a sustainable alternative to suburban expansion.

Interestingly, the idea of 'traditional urban centres' has been debated not only in city centres, but also in the new peripheries. These conflicts are recognisable in Victor Gruen's work, a pioneer of the shopping mall and the downtown revitalisation.[164] The most innovative shopping mall concepts incorporate traditional urban space ideas within their public spaces, known as commercial villages, substituting the enclosed commercial mall – especially where the climate allows – for an open system of streets, squares, and gardens as foreseen in Disneyland's Main Street. The novelty is that the suburbs, traditionally low-density residential areas, are turning into leisure and employment spaces, as we will see further on. In North America, the return to downtowns and the philosophy underlying this shift, has influenced a different way of thinking and organising the whole urbanised territory.

The increasing sensitivity for environmental approaches allows some control at a regional scale, affecting the whole urban space, such as with the avant-garde Western cities of Portland, Seattle, and Vancouver. The downtown renaissance[165] became a general reality in the last decades of the 20th century in cities across the United States and continues to be relevant around the world. Unique ways of expressing this can be found in cities such as New York, Boston, or San Francisco, where the downtown renaissance is linked to the lifestyle of a new wealthy upper class. What some call the 'SoHo' syndrome, referring to New York's vibrant neighbourhood and its effect on the bordering areas, is difficult to translate. The urban void infill, usually with apartment and service blocks, is linked to sustainable strategies of urban intensification and, at the same time, to real estate elites serving social groups with high purchasing power. Whether young or old, this group aspires to a particular urban lifestyle surrounded by cafes, shops, restaurants, theatres, and museums. The return to the urban centre often comes from the so-called 'Edge City', facilitated through the reconstruction of the public realm, which fosters hybrid uses, investment in facilities and sophisticated services, as well as the attraction of talent and the creative class to these emerging areas. These urban renewal processes require, in almost all cases, a significant improvement in the mobility system and a reconsideration of urban traffic.[166]

Clear examples of active reclamation of the urban centre to alleviate the absence of relevant historic spaces include: San Francisco's Embarcadero Area after the 1989 earthquake, Dallas' Victory District, San Antonio's River Walk, the centre of Little Mansfield (Ohio), the re-naturalisation of the Don River in Toronto, and the cultural and environmental reactivation of previously inhospitable Midwest city centres such as Phoenix. The urban centre is not only a space for the concentration of economic power, it is also a space for services, a place for synergy and interaction between people, as well as a place for human co-existence and an emerging creative class capable of propelling a new economy.

## AVENUE OF THE ARTS, PHILADELPHIA

The return to city centres requires complex combined actions, since it is not just about attracting residents, but regenerating, through hybrid uses, spaces that have been neglected by the population. These include spaces that generate jobs and guarantee a coherent use of the city. In some North American cities such as Philadelphia or New York, there is an extremely well-established tradition of reclaiming central urban spaces, positive results yielded from both the implementation of specific policies as well as relatively natural processes.

In Philadelphia, two examples of vibrant centralities are Society Hill, one of the city's most sophisticated neighbourhoods, and the popular, complex, and colourful South Street area. There had always been an interest in improving the quality of Philadelphia's wide urban centre, as recognised in Edmund Bacon's pioneering work. However, the economic decline of the 1970s, the collapse of heavy industries, and the outsourcing of activities with wide effects on North America's most dynamic areas, made the downtown decline unavoidable.

Philadelphia's economic comeback was linked to two essential factors: universities and biotech; two excellent components that have reinvigorated the city's economy, now fundamentally based on intellectual capital. Another key factor was Philadelphia's territorial inclusion in the Washington-Boston axis, especially with its proximity to New York and its excellent railway connection. A solid commuter train network linking Philadelphia's city centre with its metropolitan region, atypical in the American context, has also been important. The proximity of the urban centre to some of the main university campuses and the opportunities derived from Philadelphia's historic sites (the first United States Constitution was drafted here) were also key in rejuvenating the downtown areas.



The year 1990 marked a milestone in the revitalisation strategy for Philadelphia's centre, with the creation of the Philadelphia Center City District (CCD) association. It brought together around 2,000 owners, with the main goal of guaranteeing employment and bringing competitive efficiency to the decaying area, offering new opportunities for services companies and promoting better quality of life for its residents. The CCD is made up of around 100 blocks in the urban centre, visited daily by half a million people, including residents, workers, business owners, and tourists. The CCD complements municipal services by promoting security, guaranteeing cleanliness, maintaining gardens, signalling, and providing other increasingly sophisticated services. Physical and functional improvement programmes were implemented for historic buildings. Actions destined to attract new residents, cultural activities, and diverse services such as hotels, retail, and restaurants have been funded. The decision to promote a convention centre was crucial in attracting a first-class hotel. The University of Pennsylvania is the most important university in the city and one of the engines of transformation for Philadelphia. One of the main streets connecting Philadelphia's centre with Penn's campus was named the Avenue of Technology. Around it was the famous University City Science Centre, a business incubator for new enterprises operating in synergy with the intellectual capital of key universities in the area.[167]

In a world of cities that are increasingly open and competitive, creativity is a differentiating attribute. On one hand, is the acknowledgement of the strategic value of artistic activities – their potential influence on local economies and their capacity to stimulate creativity and innovation – and on the other is the role of art in improving public spaces, which justifies the growing support for art in the city. It is not only a matter of renewing local cultural facilities. From Jaume Plensa's sculptures at Millennium Park, Chicago, to Ulrich Rückriem's granite blocks on the Nervión promenade in Bilbao, urban art contributes to a new collective image for the city. The growing role of art in improving cities was discovered in Philadelphia. With the creation of the Avenue of the Arts on Broad Street, perpendicular to the Avenue of Technology, Philadelphia's city centre was reborn. This strategy redirected urban functions thematically along an important city axis, incorporating the new Opera House, theatres, concert halls, student dorms, artistic organisations, institutes, hotels, residences, restaurants, jazz bars, music stores, and such. The Mural Art Program is also worth highlighting, designed to improve the urban landscape through mural art, while strengthening local identity. This programme had a strong impact on improving ties between citizens

and their neighbourhoods. It used the city's dividing walls as large canvases for artists. Both acclaimed and emerging artists have participated in transforming the city's image, creating a rich system of micro public spaces that have provided Philadelphia's centre with a cosmopolitan and diverse character.

## NEW YORK'S HIGH LINE

The redesign of public spaces played a strategic role in the regeneration of urban spaces, as a guiding thread for large and complex projects. A paradigmatic, widely-publicised project is New York's High Line regeneration. The current 2.4 kilometre-long linear park, built on an elevated and abandoned railway track, is a flagship project of urban landscaping, a symbol of the transformation of the Chelsea neighbourhood in Manhattan's Lower West Side. In 2002, when the demolition of the railway structure was approved, a group of citizens led by a young writer, Joshua David, and an artist, Robert Hammond, who were Chelsea neighbours, created the Friends of the High Line association, proposing its conservation and reuse. After the tragic events of September 11, 2001, the association found new motivation in a favourable context to save what many considered an old useless ruin.[168]

This elevated linear park opened in 2009 with a design that was attractive and capable of introducing nature and a new image to the neighbourhood. It was also well-planned, with an intelligent layout of the elevated promenade that had access to metro stations. The gradual transformation of its surroundings can be observed from the High Line's privileged viewpoint, adding to the magnificent experience of walking and enjoying this great public space, linear park, and boulevard. What was conceived as a neighbourhood gathering space has become leverage to attract investment, revitalise construction, and generate new economic activities. It is an urban regeneration project with a broad scope, transforming adjacent areas and consolidating a new way of seeing derelict urban spaces such as the Meatpacking District. The High Line crosses the heart of this neighbourhood, which is today used as a point of reference in New York. Just a few years ago, the neighbourhood was functionally degraded, a group of neglected warehouses and obsolete buildings, linked to the city's slaughterhouses, including the High Line itself. Despite its dynamism, nothing is simple or happens by chance in a city like New York. Citizen commitment was the starting point of the project and it found an excellent architectural, urban, and landscape response. At the same time, it encountered an open and dynamic plan, properly guided and aware of the potential of what was being done from a very early stage. The private sector responded to this well-guided public action and a demanding social context sensitive to transformation. New York City was also awarded the Lee Kuan Yew World Cities Prize by the Singapore Government in 2012 for the transformation process led by Mayor Bloomberg, especially for the work to reclaim urban spaces around the High Line.

The regeneration of city centres is currently the main issue on the urban agenda, not only in Europe and North America, but also in Asia, Latin America, Australia, and Africa. The most innovative cities are shaping their future development with a greater balance between new development and the regeneration of central areas. The High Line project is both unique and exemplary. Thus, we can learn a great deal from this experience in the collective challenge of reclaiming consolidated spaces in our cities. We must change the way we look at built structures and the way we perceive citizens' and civil society's power to transform cities. Public institutions must guarantee stability and efficient management for collective interest projects. This must occur both in developed nations' and in emerging countries' cities, where rethinking the existing city is still a crucial issue of contemporary urbanism.

# 06

# STRATEGIC PLANS AND URBAN TRANSFORMATION

- # CITIES AND REGIONS IN COMPETITION, "MAKING BETTER PLACES"
- # CITIES AS CORPORATIONS: THE METHOD OF STRATEGIC PLANNING
- # ARCHITECTURE AS URBAN STRATEGY
- # EVENTS AND CITIES: THE PULSAR EFFECT
- # COMPARING URBAN AND STRATEGIC PLANS
- # *PROJET URBAIN*, URBAN PLANNING WITH A STRATEGIC ORIENTATION

In the final decades of the 20th century, strong concerns over the future of cities rose, particularly in the face of increasing global economic competition. In this new context, conventional urban planning became insufficient, leading to a new way of approaching these issues.

Strategic planning is a method inherited from military and business, first applied to a city in San Francisco in 1982. This method was also introduced in the lead up to the 1992 Olympic Games through the Strategic Plan for Barcelona in 1987.

Strategic plans have tried to overcome the limitations of traditional urban planning. Many cities and territories rely on this approach to offer interesting reflections on the territory's economic potential and participatory dynamic. However, it often neglects to consider the structure and physical morphology of the city - instead proposing several generic sectoral recommendations for very diverse locations. Applying a strategic approach to planning has yielded both euphoria and disappointment.

At the same time, special events such as the Olympic Games have provided the opportunity to activate great urban transformation. Urban design and architecture have gained prominence and demonstrated their full potential with these events. The urban renewal thrust that emerges from these unique urban events has been called the 'pulsar effect'.



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## CITIES AND REGIONS IN COMPETITION, “MAKING BETTER PLACES”

The end of the 20th century gave rise to debates on the future of cities in a new economic context, as globalisation forged new models of competition and cooperation. The traditional role of cities as service centres within their region, or as production centres based on local factors of production, was no longer viable. The development of transport and communications systems, coupled with lower tax barriers, meant that mobility had increased exponentially, subjecting cities to an unprecedented level of competition. The state’s role in the economy – previously predicated on traditional production – also saw modifications due to uncertainties in the international environment, technological advancement, and the restructuring of labour. The rise of the information society and the service sector led to unexpected growth in many cities around the world towards the end of the 1980s and persisted throughout the 1990s.

In the face of uneven innovation and economic development, nation states appeared powerless to implement territorial redistribution policies. Economic activity tended to concentrate in a few large urban regions, whereas urban matters were intensely disseminated over the territory. Traditional urban planning evolved within this context, giving birth to a new approach, which ensured that cities drove the economy and became the main centres for decision-making.[169] Local entrepreneurs who could take advantage of the available resources and skills were especially pertinent. At the same time, the role of the open market made it easier for cities to be more competitive, requiring them to build on their individuality and design suitable strategies in order to succeed.[170] The rise of strategic planning is a response to these changes, becoming increasingly crucial for the maintenance of a city’s economic competitiveness, social cohesion, and environmental quality.[171]

The essential purpose of urban planning is to improve the quality of life, but there are arguments about whether it should be used to drive economic development. Some argue that increased wealth leads to improved quality of life and that richer cities tend to be more creative. The crux of the latter is that culture, creativity, and innovation are the lifeblood of successful cities. Jane Jacobs, for instance, warned of the risk of stagnation if cities do not reinvent themselves constantly.[172] Peter Hall, on the other hand, suggested that periods of intense cultural creation and technological innovation, which can be defined as a city’s ‘golden age’, are exceptional and cannot be expected to be long-lasting.[173] However, he also

A long-term strategic vision can inspire a sequence of short-term actions. Madrid Life.



Fundación Metrópoli

The Bay of Pasajes in San Sebastián. The before and after images of the port city as it transforms into an innovation district for the knowledge society.

presented some pessimistic predictions that, thus far, have not become reality, such as Oswald Spengler's "Decline of the West" and Lewis Mumford's conjecture of 'Megapolis to Necropolis'. Despite their inequality and array of other conflicts, cities remain centres of creativity, vitality, and development.[174]

A common criticism of planning is that it does not always lead to specific solutions and outcomes. In 'Making Better Places', Patsy Healey proposed planning projects that emphasise the implementation of previously imagined futures; as well as planning for the many, instead of the few. According to her, an agreement should also be reached based on what constitutes an improvement to the city, and how such achievements can be measured empirically.[175] Healy proposed a strategic approach to the interaction between neighbourhood management, large urban projects, and spatial strategies. Having a project for the future adds value by helping the city distinguish itself on the global stage. Spatial planning can contribute to the transformation of a territory, therefore it is important that the outcome can be assessed in relation to the collective interest.[176] The capacity to design programmes with well-defined and measurable goals is one of the greatest qualities of strategic planning.

Strategies to make cities more competitive often entail risks and contradictions. Private interests, for instance, are not always compatible with common interests. Many cities have also exemplified some of society's biggest problems: poverty, segregation, pollution, and so forth. Conventional planning is no longer sufficient in the face of such issues and increased global competition, thus necessitating strategic planning.

## CITIES AS CORPORATIONS: THE METHOD OF STRATEGIC PLANNING

While conventional urban planning tends to take a broad and spatial view, strategic plans introduce a goal-focused approach to intelligently guide urban transformation. There is an emphasis on applying methods and techniques that leverage on local strengths. One can therefore understand it as urban policymaking, set in the context of competition between cities and regions, with a focus on facilitating decisions and actions that will guide the positioning of cities.

Strategic planning was first applied to San Francisco in 1982. This approach was then applied in Barcelona in 1987 in preparation for the 1992 Olympic Games. Subsequently, other cities in Spain and Latin America have followed Barcelona's example.[177]

The origins of strategic planning can be linked with the race for innovation.[178] This approach arose during World War II, at a time when the arms race favoured large investments in research. After the War, the RAND Corporation (Research And Development) was founded as a think tank for the US Armed Forces, with a model derived from experience in technological and product innovation in the military field.

What is strategic planning? As in other planning fields, its definition is not a rigid one. In general, strategic planning is 'an activity to define long-term goals for a company as a whole; and subsequently generating plans to reach these goals, with adjustments to possible changes in the environment. We could also define it as a continuous decision-making process, with systematic efforts to apply decisions and evaluate results based on'feedback'.[179] Others define it in a simpler way as 'conceiving a desirable future and defining the means to accomplish it'.[180]

Strategic planning is focused on reaching, not just urban planning goals, but also economic and social benefits. It concentrates on identifying the subject of planning, strengthening leadership, and consolidating the collective identity of the city. Ideally, the planning process and the personnel involved should also extend to the implementation process in order to ensure continuity.

The classic methodological sequence of analysis-diagnosis-proposal has been maintained in strategic planning. It allows for dynamic decisions to be made that address issues and goals, which are considered more pressing or attainable. As a dynamic mechanism, strategic planning allows inefficiency to be corrected using techniques of feedback and assessment. In general, specialists define strategic planning by the following traits:



- Oriented towards a comprehensive and coordinated focus; favouring the global, multi-sectoral, and long-term vision of the city.
- Focuses on demand, the needs of citizens, and organisations based in the city.
- Prioritises cost-benefit analysis – derived from the economic assessment of actions and results – to serve decision-making.
- Identifies competitive advantages in the market to improve the urban system's economic capacity.
- Identifies and concentrates on critical long-term issues, for example through a SWOT assessment (Strengths, Weaknesses, Opportunities, Threats).
- Creates a flexible decision-making context by monitoring the plan, as well as mediating differences between political actions and private initiatives.
- Focuses on the management and assessment of interventions, based on its defined strategies.

The competition between cities is perceived as a market condition, with the goal being economic competitiveness and eventually, improvements in quality of life. As such, the strategic plan construes the city as 'supply', responsive to the demands of the market. Thus, there is invariably an emphasis on entrepreneurial activities and wealth creation.

Logically, strategic planning grants extraordinary influence to social agents, both public and private. They are essential in the setting of goals and the specific strategies to accomplish them. Strategic planning has a greater chance for success in urban societies with a high level of social cohesion, which tends to ensure greater commitment to the planning process. However, in many cities with a heterogeneous and pluralistic makeup, strategic planning needs to develop its own distinct participation and collaboration structure. Typically, participation is not open to the general public, but achieved through involving community representatives and urban groups in the decision-making process. Again, given that strategic plans are designed to achieve goals through actions, the participation structure is often key to the management and evaluation of the implementation process.

Meanwhile, the methodological sequence of analysis-diagnosis-proposal is adjusted at the beginning to incorporate the participation process. The initial part of the plan is centred on structuring an organisation that will drive the planning and decision-making procedures.[181] Typically in cities, this is led by municipalities and their governments, in addition to a representative sample of various public and private urban agents that underpin participation. Furthermore, to obtain

external feedback, strategic planning involves gathering input from specialists and other stakeholders. A communication strategy through mass media is also developed, although there is a risk that this might be perceived as propaganda.

The second phase involves a concerted effort to understand the city. Sectoral analysis is conducted, with entrepreneurial logic applied in the analyses of the city's internal characteristics and its crucial components – this includes economic activities, human resources, competitiveness, quality of life, as well as external demand and competitors. One of the techniques borrowed from the corporate world is benchmarking, which involves evaluating rival products and replicating what is deemed advantageous. The analyses allow goals to be prioritised in the strategy, as well as connecting the needs, demands, and resources. A development model is created in consideration of the city's physical, economic, and social variables.

The subsequent step establishes the city's characteristics and its position under various circumstances, setting the strategic vision for a desired future. Techniques, such as 'scenario definition', are used to establish the model for future development. Known also as an uncertainty reduction technique, this method allows various scenarios to be anticipated, and for various criteria and goals to be differentiated. This is achieved by assessing the current reality with the desired future according to foreseeable scenarios. As a result, strategic goals are established in relation to the aspired model, with each goal linked to an action strategy involving projects or programmes.

The credibility of this process depends largely on its participation structure, communication policy, and management. The viability of implementation is also subject to the commitment of public and private agents. At the same time, the plan's flexibility and adaptability are crucial in addressing the changes and issues that might arise during the process.



## ARCHITECTURE AS URBAN STRATEGY

In many cities, architecture itself has become an urban strategy. This can be related to what we will later refer to as the 'pulsar effect'. Distinctive architecture is often used as an instrument to consolidate local identity and illustrate a vision for the future.

This is hardly a novel concept, as architecture has always been used as an expression of power and promoted in cities as an embodiment of their glorious past. However, certain parts of this have been altered due to the changes experienced by the architectural field during the recession of the 1970s. As Benévolo wrote, "The patient research of modern architects has demonstrated, over 50 years, that the cities we live in are not unavoidable, for there are feasible alternatives. However, without experimentation and careful investigations on what is hindering new proposals from success, they risk being rigid and unchanging".[182] Scepticism was inevitable when almost all the great architecture remained on paper and were not built. At the same time, there was a view that certain urban facilities could catalyse transformation and generate value, especially if they are linked to spectacular avant-garde architecture, such as the Centre Georges Pompidou in the Beauborg district of Paris.

The first building in the business district of La Défense was the Centre des Nouvelles Industries et Technologies (CNIT), which was inaugurated in 1958 under the mandate of Georges Pompidou and Charles De Gaulle. After muchuncertainty and hardship, the magnificent Grande Arche de la Défense was erected based on the design of Johan Otto von Spreckelsen, who won a competition for its development in 1982. By that time, the district's many office buildings were already established. In Europe, only London's Canary Wharf and Frankfurt's business district come close to the number of international corporations represented at la Défense.

To understand this, however, we must go back to the 1970 Centre Pompidou competition, which was won by two young architects, Renzo Piano and Richard Rogers. When it was completed in 1977, few were aware of what Baudrillard would later call the 'Beaubourg effect', namely the impact and innovation capacity of architecture in a city. The Centre Pompidou, however, soon became an embodiment of a vigorous cultural project supported by the French government, a symbol for a new order for the city. Baudrillard interpreted Beaubourg as an illustration of a theatre-city serving cultural strategies: "…an order of simulacra is maintained only by the alibi of a preceding order. Then, a framework composed

of fluxes and surface connections results as content of the traditional culture of depth." The creation of a new space over the existing urban site is a powerful demonstration of the city's transformative capacity. As Baudrillard explains,[183] such a space is defined by an ideology of transparency, visibility, versatility, consensus, contact, and enriched by a range of social relations, Architecture can transform the city into a 'cultural machine' that conditions its urban life and future. This 'society of the spectacle', as posited by Guy Debord in 1967, is a key part of the new leisure and tourist economy.

Likewise, despite the difference in scale and context, Bilbao's Guggenheim museum has had a comparable impact on the city. On the other hand, the transformation of the Gare d'Orsay into a museum under Gae Aulenti has not had a similar effect. Completed in 1987, the train station was spared from demolition, and its transformation into the Musee d'Orsay was proposed by Pompidou. However, despite having an impressive collection of French art and attracting many visitors, its impact on urban regeneration has been limited. This can perhaps be attributed to how it is very much a traditional museum, in addition to being in a privileged and well-preserved area of the city.

Heir to the Archigram architectural group, the Beaubourg represents a new way of understanding and is a catalyst of urban renovation. This gradual and regenerative transformation of the urban environment, based on cultural and architectural action, became known as induced urban development. The maintenance cost and restoration undergone by the Centre Pompidou in the late 1990s, two decades after its completion, is testament to its success and relevance. Its reception by the public has been outstanding, serving as a facility for a society committed to consuming culture. The renovation of the Louvre also consolidated this effect.

During the Second French Empire, Baron Haussmann's seemingly endless projects upgraded Paris, beyond what we today recall as the boulevard network that confers unity to the city. This organised action of large public works was characterised by the creation of a modern urban infrastructure, a sewerage and canal network, underground and surface trains, large tree-lined avenues, as well as a new park and square. If we can draw an analogy between this strategy and the one originating after 1980, the main difference is that architecture now takes the leading role.

Although the Paris region still has an unprecedented infrastructure programme, mainly linked to transport and more visible in the periphery, grand architecture is what holds the key. The local ruling class, led by then-President Mitterand and Mayor Chirac, promoted an original city-making strategy through isolated interventions. The Beaubourg and the failed Les Halles competition set a precedent. The Bastille's New Opera, La Villete, or Grand Arc competitions, triggered an urban architectural race which continued in Paris, with intermediate landmarks such as Dominique Perrault's National Library of France, completed in 1997. Arguably, this race indicates the creation of new architectural monumentality – establishing public architecture with the power to mark the city with new milestones and meanings – which allows us to recognise the spaces of power and official culture. La Défense, faithful to the decentralising logic of the post-war period, was conceived in the first urban periphery as a new business centre to decongest and complement Paris's traditional centre. However, the neighbourhoods of Bercy and Tolbiac, situated on both sides of the River Seine where the new Finance Ministry and the Library were respectively located, were the result of very intense urban regeneration initiatives developed in the late 1980s.

This new monumentality was created through landmark projects such as the refurbishment of the Louvre. Its success was not only the result of the architect I.M. Pei's intelligence, but also of the project's ambitions and complex decision-making. The project's many facets included dedicating the entire Louvre to culture, transforming the metro stations and the old Royal Palace's foundation, as well as relocating the vast office space of the Finance Ministry. Paris differs from other major cities such as London, New York, Amsterdam, or Frankfurt in that the monumental will in these other cities is barely recognisable. It is not always possible to plan cohesively in these other cities due to the different initiatives of public or private actions, or those derived from individual stakeholders. Perhaps only Berlin, when it became the capital of a re-unified Germany, can be construed as having a similar character to Paris. The likes of Abu Dhabi, Dubai, Singapore, Shanghai, and Hong Kong represent another stage in the evolution of urban monumentality – one that can be related to Hugh Ferriss' 1912 drawings of New York's silhouette, which was initially confused with the Las Vegas Strip. In these examples, the city promenade culture tends to be substituted by surveyed spectacle spaces. This has also gradually affected the non-places of an emerging cyberworld, which encompasses spaces of transit, consumption, and leisure.

Since the end of the 20th century, architecture has undoubtedly played an important role in the urban renaissance. In many cases, it has been an essential element in the leadership and symbolism of the city's transformation. We live in a civilisation that collectively aspires to identify with success. Architecture, far more visible than urban planning, became a much more desirable representation

of this. Landmark buildings that aspire to become a symbol of a city's modernity, overshadows critical enquiries about their purpose. Their grandeur often allows them to avoid questions about their coherence to the urban fabric and the appropriateness of their construction.

Nevertheless, urban architectural projects can be of great value to the public when they are well-planned. One of the most outstanding examples of this is the regeneration of areas with an abandoned port or railway infrastructure, which can free extremely valuable space within the city. The recovery of London's Docklands, starting with Canary Wharf in the 1980s, is deemed very successful today, despite initial criticism. Few remember the bankruptcy of the real-estate corporation Olympia & York; even the expansion of the Jubilee Line has been successfully completed. This 'strategy of capital' is now seen throughout the city, from the surroundings of the Gherkin (the Swiss Re Tower), designed by Norman Foster's studio, to the Shard Tower over London Bridge Station, designed by Renzo Piano. In stark contrast are nearby areas such as Brick Lane and Coin Street, which have been activated by people and a sense of community.

Another exceptional example for its clarity and the scope of its goals is the regeneration of Rotterdam's port area, with the Kop van Zuid as its flagship project. It is a complex new area with hybrid uses coexisting with the regeneration of the surrounding residential areas. The project was conceived with a novel management of density, and with pioneering sustainability principles applied to infrastructure, water, energy, and waste management. Visiting Rotterdam today is a comforting experience for anyone who doubts contemporary society's potential to create relevant urban spaces. However, equally exceptional in the Netherlands is the reclamation of the Modern Movement's housing ideology, in addition to the great typological and design experimentation led by the public sector. Here, domestic architecture creatively reclaims the grandeur it deserves, a profound demonstration of what architecture can offer the contemporary city. Today, smaller-scale examples of urban renovation with a similar approach are found throughout Europe and in all corners of the world. They are a testament of the potential of architecture in cities where the strategic goal is to create appealing urban local spaces of quality.

This brings up another main theme in urban strategy over the past two decades, namely the reclamation of public space. From Medellin to Copenhagen, public spaces – whether spontaneous or institutional, domestic or mediated – are playing a crucial role in the renovation of cities and in positioning them towards the future. Architecture, as a public space project, fulfils a strategic role. This example is seen not only in cities like New York, where the High Line co-exists with Ground Zero; Superkilen, a public space continuum in Copenhagen's working-class neighbourhood or Campo de la Cebada in Madrid's La Latina neighbourhood represents the different extremes of what design and spontaneous action can offer the community. They are the expression of our urban society's longing for new spaces that can create interest and a sense of community. This can also occur within the context of larger projects, such as Madrid Río Park with its open space park system or Boston's Big Dig central linear park. Both projects happened because of controversial public investment to replace urban highways. However, the public's intense use of these new spaces has vindicated these projects. A similar initiative in Asia is the refurbishing of the Cheonggyecheon river at the centre of Seoul, a brilliant and courageous example of how to reclaim an old covered river. An urban highway running over it was removed, creating a linear park that has become the axis of the city's renovation, economic renaissance, and the reclamation of communal space. In 2015, Singapore started a project to create a large green corridor over the neglected rail tracks piercing the island. Known as The Rail Corridor Project, a green axis will flow from the Tanjong Pagar Railway Station near the city's business centre, up to the Woodlands Train Checkpoint on the Johor Strait. This 24km-long corridor will be essential to Singapore's future innovation and urban renewal. Architecture, public space, and the creation of significant urban landscapes are now important elements in the urban strategy for some of the most innovative cities in the world.

## EVENTS AND CITIES: THE PULSAR EFFECT

Recent urban history has demonstrated how special events such as the Olympic Games and World Expos can lead to great transformations in cities. They provide favourable circumstances for cities to attain competitive advantages. The 'pulsar effect' is the name given by some to the urban development momentum created by special events, denoting the benefit derived under exceptional circumstances.

The success of cities has traditionally been linked to their relationship with the market; with activities produced by a variety of fairs, events, and celebrations. World Expos catalysed important urban transformations, and in many cases, left a definitive mark on the city. Today, Paris, Barcelona, Brussels, and Seville all bear traces of previous great Expos. We can consider elements as diverse as the Eiffel Tower and the Burnham Plan of Chicago, as having been activated within the context of corresponding Expos.[184]

It goes without saying that strategic planning functions very differently in a favourable context. Barcelona's strategic plan had the advantage of coinciding with the Olympic Games, an extraordinary opportunity to reach a worldwide audience. Such an event is very specific, allowing for collaborations and agreements between economic and political agents. Above all, it requires the renewal of infrastructure and the construction of important urban facilities. An Olympic Games is an extraordinary event for a city. In this context, the astronomic analogy of the 'pulsar' – a star that broadcasts energy in short and regular intervals with great intensity – is particularly relevant. This energy alters a city's routine dramatically, opening up avenues for strategic planning, even in cities which have already attained high levels of wealth and creativity. Hamburg, for example, linked its Olympics bid with HafenCity, consisting of a great renovation project in a neglected port area. Although its bid was unsuccessful, Hamburg did not give up on the refurbishment project and promoted it at a different pace; integrating it with the city's life in an intelligent process of flexible redesign of its spaces, uses, and facilities. When Berlin became the capital of a re-unified Germany, the public and private investment it attracted was far more exceptional than that of most Olympics Games. The fall of the Berlin Wall allowed a wounded city to fulfil its potential as a great European capital.

Many cities aspire to host a relevant event that will allow them to upgrade their infrastructure and develop visibility on a global scale. Think of renowned examples such as the Olympic Games in Barcelona, Sydney, Athens, or London; the Catholic Jubilees in Rome or Santiago de Compostela; the designation of European Capitals of Culture for cities like Glasgow, Porto or Thessaloniki; the Columbus Centenary for Genoa; the World Expos in Seville, Lisbon, Shanghai, or Milan. These events promote highly visible activities along with a set of buildings, urban spaces, and infrastructure, originating exceptional strategies and urban developments. In a globalised context, there is great competition between cities to obtain this opportunity to become the site for a relevant event.

Barcelona, having successfully linked the 1992 Olympic Games to a complete and intelligent programme of urban transformations, sought for a repeat of this catalytic effect. The 2004 Universal Forum of Cultures again allowed it to draw investment into the city, recovering more seafront and incorporating new facilities that would not have been justifiable without such an event. The transformation effect of the Olympic Games remains incomparable, as the city managed to establish a link between the event and its long-term urban development. This is something that is rarely accomplished. In Seville, Athens, or Beijing, for example, the effect was much smaller, with the event site turned into an isolated precinct. Lisbon managed it successfully by restoring its relation to the Tagus River. London embarked on an ambitious plan with the London 2012 Olympic Legacy, reclaiming the industrial spaces of River Lea as an integrated long-term project. The first steps of the ambitious project, which involved spaces in Hackney and Newham by the Lea riverbanks, can be seen in a visit to the Queen Elizabeth Park. Notwithstanding local controversy, the so-called 'regeneration games' were programmed with a long-term urban vision, overcoming the geographical issue commonly associated with these processes. This was something that could not be avoided by Zaragoza's 2008 Expo, although a project dubbed Post-Expo has since directed the city's recent transformations. In short, the exceptional nature of the pulsar effect requires specific programming and actions to ensure a favourable effect on the entire city.

Great cities maintain their advantage since they can deploy resources with greater intensity than smaller ones. Mid-sized cities have greater difficulties in obtaining events of adequate international relevance. However, as demonstrated by Bilbao, it is possible to redefine the urban profile and seek recovery interventions without extraordinary events. The construction of great facilities, mainly cultural spaces, has been the favoured method to introduce a unique element to mid-sized cities, although they do not always lead to renovation and urban improvement. Smaller cities, such as Girona, can provide outstanding lessons in this regard. The city has taken decisions and actions by leveraging on existing urban features, such as using the university as a strategy to reclaim







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New centrality in the south of Madrid

the historic centre, the river as vital in improving the urban image, a simple colour strategy to recover the interest in traditional architecture, articulated public spaces, and so on. European funded programmes, such as Portugal's POLIS, demonstrate how smaller-scale urban centres also need to find new competitiveness. Sometimes, networking can establish interesting synergies, especially if they are developed over prestigious structures such as the Routes of Santiago de Compostela in Spain; the Canals in Southern France, England, or Germany; the Hacienda network in Mexico; or the Pousada and Quinta network in Portugal.

These excellent examples of the cultural regeneration in cities were produced by intense collaboration between diverse groups of politicians, architects, and urban specialists. The search for great ideas is still ongoing in many cities. Many have sought to find the best project through competitions, with excessive faith often placed on great architects. Some cities still believe that a 'Starchitect' with a recognisable brand name will guarantee results – unmistakeably another epitome of globalisation.

## COMPARING URBAN AND STRATEGIC PLANS

Despite great differences in regulations and planning systems, most European nations have found that the role of the great master plan has gradually diminished to an administrative instrument for regulating building activity and land use; it has become a regulatory document, increasingly estranged from its original city-shaping goal. Conventional urban planning finds complex issues difficult to tackle, instead concentrating on managing fixed assets. Its common criticisms include rigidity, inefficiency, the failure to attain territorial balance and address environmental issues, speculation control, as well as an inability to manage dynamic urban policies. A more versatile approach combining instruments with different scales and goals, typical of the Anglosphere, is beginning to be part of the master planning process. This does not imply a partial interpretation of the city, something that often happened in the construction of comprehensive urban plans. Despite the rise of sectorial analysis (especially in urban infrastructures), the global or systemic interpretation of the city, including its shape and territory, has been maintained. Instruments such as structure plans or schème directeurs

The Pulsar effect. There is a 20-year gap between the 1992 Olympics in Barcelona and the 2012 Olympics in London. In both cases, the great event allowed the accelerated transformation of the city, with the opening of the city into the sea in Barcelona and the regeneration of the industrial east around the River Lea in London.

(blueprints), allow for an integrated interpretation of urban matter. At the same time, development planning is articulated through master plans, utilising intermediate urban project tools to establish urban design and introduce it to a territory or urban structure. Global visions of the city are still a necessity, especially in defining economic profiles, mid-term goals, and criteria.

The shortcomings of conventional planning instruments contributed to the popularity of strategic planning. Strategic planning is better equipped for addressing change, as it is programmatic and adaptable, allowing it to respond to new social demands and technological changes. However, the limitations of a generically applied method soon became apparent. Recent strategic planning experiences have produced both success and failures. Many strategic plans have overcome some of the most glaring shortcomings of conventional planning, successfully contributing to institutional awareness regarding citizen dynamics. Nevertheless, they often overlook the city's structure and physical form, limiting themselves to 'rationalising evidence', as well as transcribing others' opinions with little innovation.

Another contribution of strategic plans is enabling an organised decision-making process to be applied to complex structures by defining goals, the actions to achieve them, and assessing results. Obviously, concepts such as decision-making, goal definition, and foresight are more difficult to apply in a city than in a corporation. The city does not have a homogeneous social nature – different groups have varying interests, with events in the city dependent on unpredictable variables. In short, a city is not the result of designing, producing, or selling a product. The social nature of urban matters dictates how strategic planning is applied to cities.

Indeed, one of the best qualities of the strategic plan is its comprehensive approach to the complexity of the city and its surroundings, especially regarding its socio-economic and political aspects. The main concern is whether the strategic plan leads to its goals being achieved. The strategic plan's suitability to establish long-term goals, strengthen leadership, and allow interaction between economic or social elements, is unquestionable.[185]

A system is made up of an ensemble of elements and their interrelations, and ideally, the whole should be greater than the sum of its parts. The General Theory of Systems was advocated as an efficient urban planning method – it developed urban models capable of accurately explaining land value, the functional relationship with transportation, as well as the allocation of housing and workspace conditioned by commuters.[186] As a matter of fact, since the last half of the previous century, there has been great advancement in urban science with a quantitative focus, highlighted by the development of models based on variables such as demography, distances, vehicle flux, and surfaces. This same interest is still reflected in many new research fields. One example is the study of the complex urban metabolism to reduce ecological footprint by advancing the efficient and responsible use of resources. Another example is interpreting big data to study urban society and economy, based on its functional relationships and its citizens' behaviour.

More than ever, cities today are dependent on creativity and innovation. The limitations of traditional planning in addressing uncertainties is clear, as cities must design and imagine their future. On the other hand, strategic planning is a response conceived from the local context, evaluating the strengths and weaknesses of each city to define a path in an open and complex global context. Nevertheless, some attempts to integrate urban and strategic plans have yielded positive results. Urban planning, as Patsy Healey claims, requires a project to be adjusted and defined according to every specific situation. A new generation of urban plans with strategic guidance is now a necessity, one that involves true 'city projects'. Cities, such as Vancouver, Copenhagen, Medellin, Yokohama, Sydney, or Auckland, have promoted their future plans in such a way, by incorporating a strategic view in their city projects and often with a strong emphasis on sustainability and social integration.

## *Projet Urbain*: Urban Planning with a Strategic Orientation

Strategic planning often risks becoming merely a series of goals and recommendations on various aspects of municipal policy, with little actual capacity to influence physical transformation. Nevertheless, spatial planning tools can be used to achieve these goals. The *Projet Urbain* is promoted in France as a city planning tool, highlighting the role of spatial variables present in the strategies for the future of the city. This is a demonstration of how physical design, based on the city's physical components, can become central to the strategic planning process.

Bernard Huet defines the *Projet Urbain* as an attempt to "concentrate all urban diversity and complexity in architecture".[187] For Huet, the first moment of the project is the knowledge of specific situation. Through the analysis of every concrete urban fact, architecture can develop an autonomous technique. The city itself is a built architecture manual. According to Huet, architecture culture



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City projects and strategic vision. Copenhagen's environmental profile and Boston's university and innovation profile.

embraces ideas that seem to long for a universe of senses: wise play, presence of the past, reconstruction of the city, analogue city, and so on. There are clear relations between geographic location, urban morphology, and the scale of buildings in defining a landscape and leading to future transformation. Some talk about the 'genius loci', but all agree on the importance of local values – the need for innovation to rely on the specificity of every region, city, or neighbourhood. Landscape and urban analyses bring us closer to an efficient understanding of the physical shape of the territory, what is being built, its components, and environmental conditions. The consequence of the coherence between architecture and urban form is the recovery of a sense of citizenship, thus the analysis offers a framework for establishing the relationship. Infrastructures, services, public spaces, and facilities play a crucial role in configuring the modern city, not only from an organisational point of view, but also as defining factors of new urban realities. To a larger extent, the contemporary city is defined by these interconnections between housing, services, large facilities, and infrastructure. Simultaneously, the contemporary city is also affected by ever-changing and increasingly complex external factors.

However, some still prefer building the city through formally complete parts, rather than based on a master plan. Partial projects based on relations defined by analysis, but with actions limited to urban fragments, try to recover the complex interweaving between needs, uses, and representations, which determine the validity of any architecture. A broader interpretation of the city is needed, even if it is only to 'place' the fragment. The spatial interpretation of the city allows for an immediate understanding of its specificities and identity. However, the morphological approach provides architecture with an autonomy that is relatively obscure. It should further the 'image of the city', establishing a series of real conditions. Thanks to the analysis of the 'unitary conception' of urban and architectural interventions, architecture can engage in the city's social construction as an urban project. This is a consequence of the interpretation of urban shape as "homogeneous architectural representation independent of its construction period".[188] Nevertheless, the urban form's autonomy will always remain dubious.

Without ignoring the existing global structure of the city, partial projects can be part of a coherent system of interventions if they are appropriately inserted into the urban system as a whole, or what we refer to as 'city projects'. The city grows upon itself, void spaces are filled, and their shortcomings are mended. The complexity of the

urban collage prevails and grows in fragments, juxtaposed over existing urban areas. The urban collage is the sum of the fragments bound by their link to the place, to the fundamental traces of the territory, and to its structural components, although invisible in many cases.

Many French experts and politicians agree on presenting the *Projet Urbain* as a strategic tool, aimed at translating the municipal government's decisions in an articulated manner. Huet's definition becomes relevant in this context. The *Projet Urbain* results from a strong will to understand, design, and conceive the city. This necessitates a state of mind aimed at capturing the evolution of a city and planning its future. As claimed by Panerai, the urban project is the result of the new formulation of the urban planner's role, as well as their relations with citizens and government.[189] Panerai, focused on urban form above all, assigns the *Projet Urbain* the status of theoretical manifestation, placing the planning logic closer to design strategy. This new tool is both strategic and practical. It belongs to the realm of politics and urban planning, although it is also used as the vehicle to structure proposals and set objectives. The *Projet Urbain* tries to render the invisible visible, illustrating what it considers necessary for the future evolution of the city. In some cases, it is explained as an alliance between the spaces and people of the city. Infrastructure and architecture, both intentional in their nature, come close to this visibility. As Panerai states, it is not a great building commission, but the design of its conditions that make built environments possible – it is a planning tool. It is called 'project' since urban planning always includes a more or less open idea of the future. It is important to differentiate the long-term cycle of a city and its short-term construction projects. The city's cycle and its transformation processes stretch broadly over many contexts – not only because the city project is complex, but due to the complexity of political processes and leaderships. Most cities that have successfully developed their city projects in the last decades have enjoyed continuity in political leadership. These include the examples of cities so profusely described throughout this book, such as Bilbao, Singapore, Medellin, and Suzhou.

Many town planners still try to find coherent links between plans and projects. A previously mentioned approach is through leveraging on the complementarity between structural planning and master planning. Structural planning is a special ally for strategic planning that allows the establishment of guidelines, ideas, and principles for a city or urban region. Master plans define the urban form for every intervention realm. As urban planning tools, projects and operational programmes have found an integrated perspective that allow specific actions to become a reality the moment they are viable. Only in this way can the planning strategy be adaptive. The increasingly acknowledged principle between territorial structure and urban morphology is public space, and in its broader sense, a system of open public spaces functioning as a network of public facilities. This is particularly prominent in cities like Paris, Barcelona, New York City, Lyon, San Francisco, Berlin, and Rotterdam. The quality of physical space and urban design, or as Healey puts it, the 'politics of place', are elements that cannot be avoided. Creating a quality public space system that is articulated and reliable allows us to fulfil many other strategic goals of an urban plan. 'City project' plans, which are appropriate to its unique context, highlight an approach that applies a specific philosophy or orientation to a place's management and development to guarantee a certain way to govern its processes, as well as reflecting particular interpretations of its qualities.[190]

# 07 THE CITY -REGION

- # REGIONAL SCALE IN URBAN PLANNING
- # PLANNING FOR THE CITY REGION, TERRITORIAL METROPOLITANISATION
- # POLYCENTRISM: THE RELEVANCE OF MID-SIZED CITIES IN EUROPE
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In the early decades of the 20th century, Patrick Geddes and Lewis Mumford anticipated the importance of the regional scale in urban planning. They coined concepts for territorial organisation that are surprisingly relevant in today's search for more sustainable development

The revolutionary development of telecommunication systems and new information technologies have generated an unprecedented dispersal of human activities across the territory. Local scale urban plans are thus insufficient to address tensions and opportunities in the territory. The traditional systems of municipal division contribute to administrative fragmentation, and hinder cohesive and holistic governance of the territory.

Within this context, 'a new culture of territory' promoted by the EU arose based on a polycentric system of cities, equal access to infrastructure and services, and sustainable development. With this, a new generation of regional scale tools have emerged in response to a changing territory. This is the case of Euskal Hiría, a city region project in the Basque Country, and the Planning Guidelines for Valladolid. Both these projects were presented awards by the European Council of Spatial Planners for their use of the landscape as the key to understand and interpret the future of the territory.

The case studies of Copenhagen-Malmö, the Colombian Caribbean and the Santanderes Diamond project allow us to verify the importance of working in cities at the territorial scale.




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Polycentrism and the regional vision. Java Capital Diamond and the transformation of Jakarta waterfront.

## REGIONAL SCALE IN URBAN PLANNING

Patrick Geddes (1854-1932) is remembered as the first to advocate understanding the city in relation to its broader region. He attempted to link the urban and natural environments, so that the city could benefit from its surrounding natural and rural areas. The origin of his regional investigation is summarised by his motto 'diagnosis before treatment', with the region providing organised knowledge on the territory.[191] Geddes introduced an interdisciplinary perspective to urban planning, insisting on the city as a human organisation rooted in its history and environment. The idea of regional geography as the fundamental essence of urban planning was – and still is – a novel and radical concept.

Geddes, Vidal de la Blache, and other pioneers of the regional dimension in urban planning have returned to prominence due to rising contemporary interests in the environmental aspects of urban studies. Nevertheless, the environmental argument on its own cannot influence the growth and restructuring of cities in complex territorial contexts. For this to occur, it is necessary to weave alliances and agreements between the different stakeholders of the public sector, private sector, and civil society. It is only then that we can construct efficient urban and metropolitan models, which are integrated with their regional surroundings and possess intelligent economic orientation. Today, the regional dimension and sustainable urban development approach are essential for the improvement of our cities.[192]

During Geddes' time, urban plans were committed towards urban expansion and the beautification of cities. However, in 'Cities in Evolution' (1915), Geddes attempted to explain the development process of the great modern urban agglomeration, envisioning what came to be known as urban sprawl and the megalopolis. These issues are closely linked to the regional planning renaissance. Geddes did not favour the term 'metropolis'; instead he coined the 'conurbation' concept to explain a complex urban system made up of groups of industrial cities and nearby nuclei.

In his article 'The Valley in the Town',[193] Geddes developed a basic vision of the urban region, combining interrelations between the city and its territory from a global perspective. With graphics and diagrams to articulate spaces and knowledge, he structured occupations that involved taking care of or exploiting nature such as miners, woodmen, hunters, shepherds, farmers, gardeners, and fishermen. In turn, these trades are

related to other urban trades, such as carpentry and baking. Studying the region enables an understanding of the dynamic environment in which humans dwell. He believed that cities play a decisive role in the transformation of the territory, which is why planning needs to encompass the study of both surface and underground, climate and wild life, natural resources and human settlements, as well as social and economic conditions. Acknowledging that each urban setting is unique, Geddes spoke of the 'city's soul', referring to a place's character.[194]

Geddes became an important figure for New York and London's first regional plans, influencing key players in the American Planning Association, as well as Patrick Abercrombie. An admirer of Geddes, Lewis Mumford advocated passionately for urban planning on the regional scale: "Regional planning asks not how wide an area can be brought under the aegis of the metropolis, but how the population and civic facilities can be distributed so as to promote and stimulate a vivid, creative life throughout the whole region [...] It sees people, industry, and the land as a single unit".[195] There is no other way to ascertain the city's quality of life.

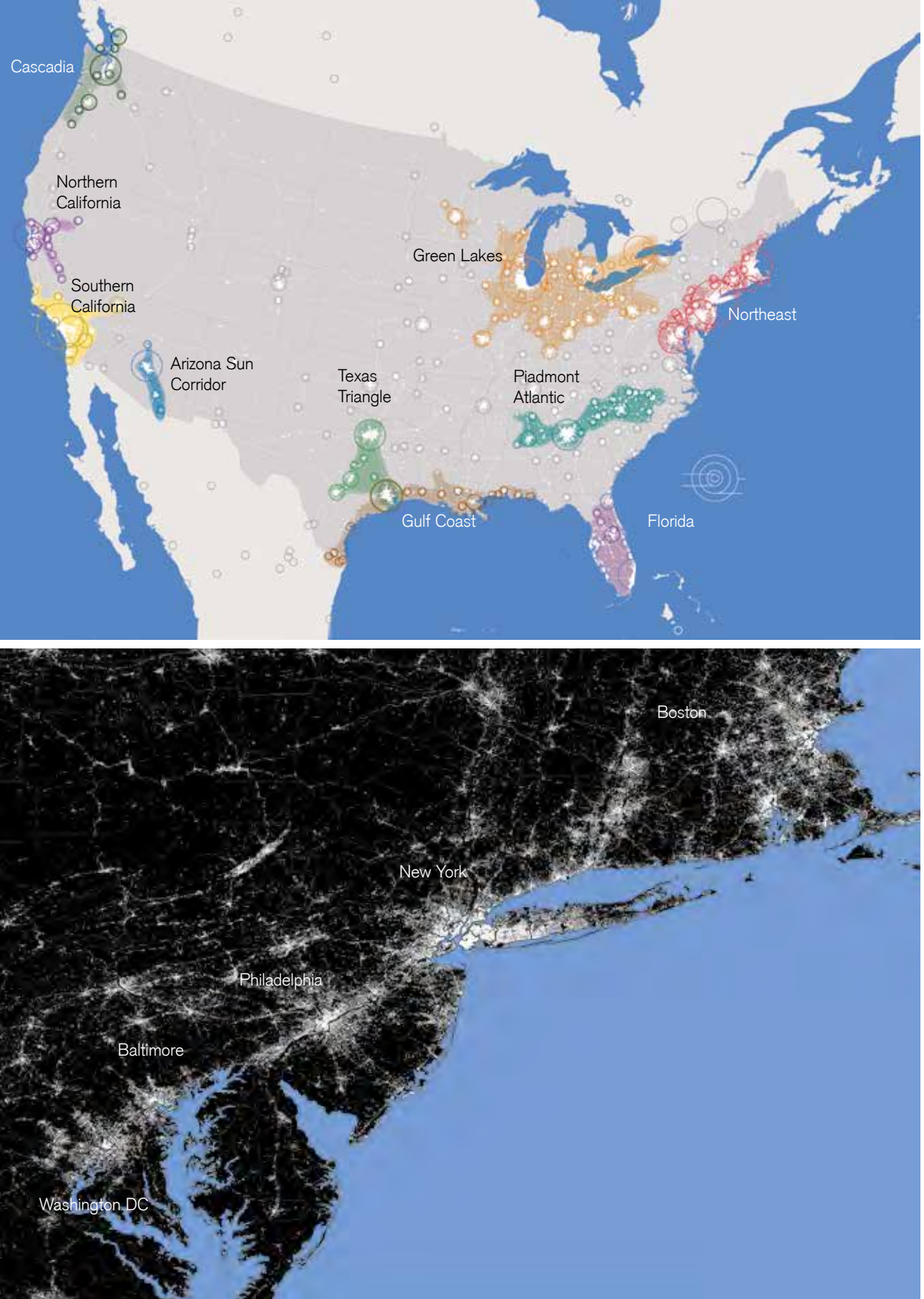
Lewis Mumford proposed utilising knowledge and regionalism to achieve balanced relations between the wide array of human activities and territorial realities.[196] He described the necessary quest to find balance between population, production, and natural resources, in order to achieve sustainable development. In 1925, when his friend Clarence Stein talked about the 'dinosaur city', Mumford described the fourth migration as the dispersion of population in urban regions caused by new technologies, such as railways, highways, telephones, and airplanes. He also perceived a city-region model with positive interactions between cities and nature. Mumford suggested that it is necessary to ensure compactness, as well as mixed-use areas for positive regional and social balance. Geddes proposed that urban centres must be refurbished through conservative surgery in order to maintain their centrality. All these concepts demonstrate the great relevance and validity of Mumford's ideas, even though they were not the dominant view during his time.[197]

Metropolitan scale planning developed effectively in Europe and the United States during the middle decades of the 20th century. Larger scale regional planning did not have much relevance, except in a few nations such as the Netherlands. Some relevant examples are the metropolitan plans for Greater London (1944), New York (1928-1931), Copenhagen (1947), and Paris (1965). Their success was based on developing infrastructure, rearranging centralities, promoting residential neighbourhoods with mostly social housing, and protecting natural and agricultural spaces. When post-industrial cities and the third wave of urbanisation arrived,[198] there were questions once again concerning the role of traditional large agglomerations, as well as their adaptive capacity and long-term survival. Transformations due to the development of centrifugal forces over the territory became extremely important, perhaps analogous to the one that took place between 1880 and 1914, in creating regional planning: "the metropolis is simultaneously a scenario for expansion and dynamism, as well as destruction and decadence".[199]

Counter-urbanisation processes partially explain the metropolitan decline in the United States and Great Britain over the last decades of the past century. It can be described as a demographic phenomenon that leads to the diffused expansion of small towns or rural areas, and in time, the decline of metropolitan industrial spaces. Other authors referred to de-urbanisation as a 'natural' urban tendency or interpreted the sub-urbanisation dynamic as a stage in large scale metropolitan transformations.[200]

When interpreting the urban region, conditioned by the principles of centrality and the diffusion processes of urbanisation, the concept of boundaries in a city is critical. However, the problem of demarcation is at the centre of its practical difficulty.[201] Taking an extreme approach to interpretation would be to only evaluate the historic and natural features of the region, as opposed to the functional region. Boundaries are often referred to in relation to a centre (or a system of centres) where urban activity is concentrated, a centrality that has to do with domain and accessibility. During the early stages, the powers of space and exchange are crucial. This is because, from a historic perspective, the traditional city was a space for power and shelter, but since then, urban centres have evolved into spaces of capital accumulation, administrative, financial, and commercial centres. A key factor in the current evolution of city centralities is the potential for interactions in the post-industrial society. In order to describe the urban relationships of production, exchange, and consumption, the concept of a networked urban system was introduced. The function of centrality performed by mid-sized cities remains relevant, with some having had outstanding development levels, such as France's regional spaces being conceived as 'life basins'.

Infrastructure networks guarantee the level of accessibility, communication, and nodality that come with centrality functions, steering the diffusion urban models towards polycentricism. This can be attributed to the newfound interest in the 1990s for cities to collaborate, creating synergies and symbiosis.[202] The




Urban America 2050. An initiative by the University of Pennsylvania to identify the great engines of economic growth in the United States.

problem is that regions tend to differ greatly due to both development and cultural issues. This includes uneven settlement patterns and economies with great intangible variables. The most dynamic realities coexist in city-regions with environments of simple survival, where it is more difficult to reap the benefits of progress; this is undoubtedly less visible in Europe than in other examples, such as Mexico City, Sao Paulo, New Delhi, Jakarta, Johannesburg, or Cairo, but they still remain recognisable. The need to understand urban regions on this territorial scale, beyond traditional administrative boundaries, remains necessary.

## PLANNING FOR THE CITY-REGION, TERRITORIAL METROPOLITANISATION

In many territories, there is noticeable regional inequality displayed by the co-existence of wealthy and declining areas. Mending imbalances in the local development of each aspect of the territory is not an easy task. Economic and social changes linked to the globalised economy produce challenges that transcend the capacity of many urban regions. Within this context of uncertainties and opportunities, the allocation of public investment has often led to conflicts of interest among cities and regions. Strategic and regional planning is typically defined as "giving geographical expression to the economic, social, cultural, and ecological policies of society. It is, at the same time, a scientific discipline, an administrative technique, and a policy, developed as an interdisciplinary and comprehensive approach directed towards balanced regional development and the physical organisation of space according to an overall strategy".[203] However, this has led to spatial planning goals that might contradict each other, such as the need to balance socio-economic development, improve the quality of life, manage natural resources responsibly, and protect the environment.

The magnitude of the goal requires careful observation of the territory and the complex interrelationships that take within it. As we have already pointed out, regional planning arose from the aim of controlling the overgrowth of large cities and reducing urban sprawl. The first planners of the 20th century developed a vision that surpassed the local scale, which we can see in examples, such as Burnham's 1909 Chicago Plan or Schumacher's schemes for Hamburg during the early 1920s. In these examples, the seemingly disparate concepts of monumental character and organic reference are integrated by 'scale' during the development of the urban plan.

Besides the Netherlands, where this approach was developed out of sheer necessity due to land reclaimed from the sea through polders, it was countries in the Anglosphere that first developed metropolitan-profiled regional planning. New York's plan resulted in the Regional Planning Association of America, which remains active today, whereas the aforementioned Greater London Plan led to the development of the New Town programme. These are the first, and perhaps most relevant, examples of regional planning. These enterprises were inspired by theoretical and practical precedents, such as the Garden City movement, in addition to other emerging regional planning processes like the New Deal policies and the work of the Tennessee Valley Authority.

Originally, the rural-urban duality, an essential idea in Ebenezer Howard's Garden City, was a decisive one. 'Escaping' or 'returning' to the countryside expands its aristocratic precedents, becoming the main remedy against the decline of the industrial city. Although the longing for the countryside contains elements derived from the massive migrations towards the city, such as nostalgia, it is also linked to the search for a healthier natural environment to expel urban 'evils'. Sir Patrick Abercrombie explained how the countryside's conservation culture could be the essence of regional planning. Abercrombie suggests that the coherent consolidation of this 'intermediate landscape' should be the main goal of planning, since it can guide the expansion of large urban areas.[204]

Earlier, we interpreted the London Plan from the New Town perspective. Its precedents were the early studies commissioned by the Russell Sage Foundation, a private entity. These would end up becoming the 'Regional Plan and Survey of New York and its Environs', directed by Thomas Adams after 1923. Among the group of experts that contributed were some of the founders of the Regional Planning Association of America (RPAA), such as Lewis Mumford and Benton MacKaye, who were also some of the first promoters of ecological planning. The plan was presented in 1929, based on the goal of halting centralisation and fostering a balanced regional distribution of industry, facilities, and services. The plan did not outline any administrative restructuring. Without official approval, the proposals ended up being diluted, although the plan inspired other initiatives. Investment in infrastructure, including the introduction of parkways, the creation of parks and leisure areas, and the large social housing programmes, were the plan's enduring achievements.

In Europe, there are parallel cases such as the proposal by Ernst May for Frankfurt's '*Siedlungen*' urban programme between 1925 and 1930. It provided a stark contrast to Germany's prevailing vision of the continuous city, the *Großstadt*, or metropolis with unlimited growth possibilities. A polynuclear urban system with a central city linked to new satellites and adapted to its landscape and territory conditions was proposed.[205] Mobility and public spaces were undoubtedly the key issues in the early perception of the metropolitan region.

Although some of these plans were not meticulously implemented, their influence was truly decisive in the regional concepts that merged the urban and the natural. These concepts were used in the Dutch Randstad after 1958; in Paris's Regional Plans after 1960, relying on the Villes Nouvelle plan to balance the territory; and in the 1948 Greater Copenhagen Plan with its distinctive conception of the Five Finger plan for future urban development, rooted in the Danish countryside preservation policy.

However, the rural-urban duality is no longer useful in distinguishing the close realities of today. The term 'urban region' is generally used to refer to the city's area of influence – its hinterland, urban fringe, region, and district. However, the phenomena linked to the configuration of that environment, interpreted earlier as sub-urbanisation processes, are far more complex today and closer to urbanity, as expressed by the idea of the Edge City. Urban spatial diffusion leads us to consider a new urban model: the elongated urban, the diffuse city, or the disperse city,[206] where space consumption is largely increased and location options are a lot more open. The question, however, is whether these cities will be able to successfully tackle their challenges and conflicts. Planning focuses on wider horizons, where environmental interests co-exist with the search for economic efficiency, as well as equity amongst regions and citizens. This is where the administrative organisation of the territory faces many difficulties. Planning evolution demonstrates that the region, beyond being an administrative concept, is a union of life and knowledge experiences that can be expressed with spatial coherence. This must be translated into part of the territory's government and governance. There is also a need to manage the emerging metropolitanisation of spatial processes, which generates new unplanned urbanities and territory hierarchies, either spontaneously or directed by the market. This contemporary urban reality is questioned by Francesco Indovina, "It might be worth questioning if the regional metropolis might provide answers to challenges produced by the current situation, especially those deriving from globalisation, new divisions of work and the need for sustainable development. In short, does the new metropolitan mosaic, whether conscious or not, contribute positive answers to these problems?".[207]

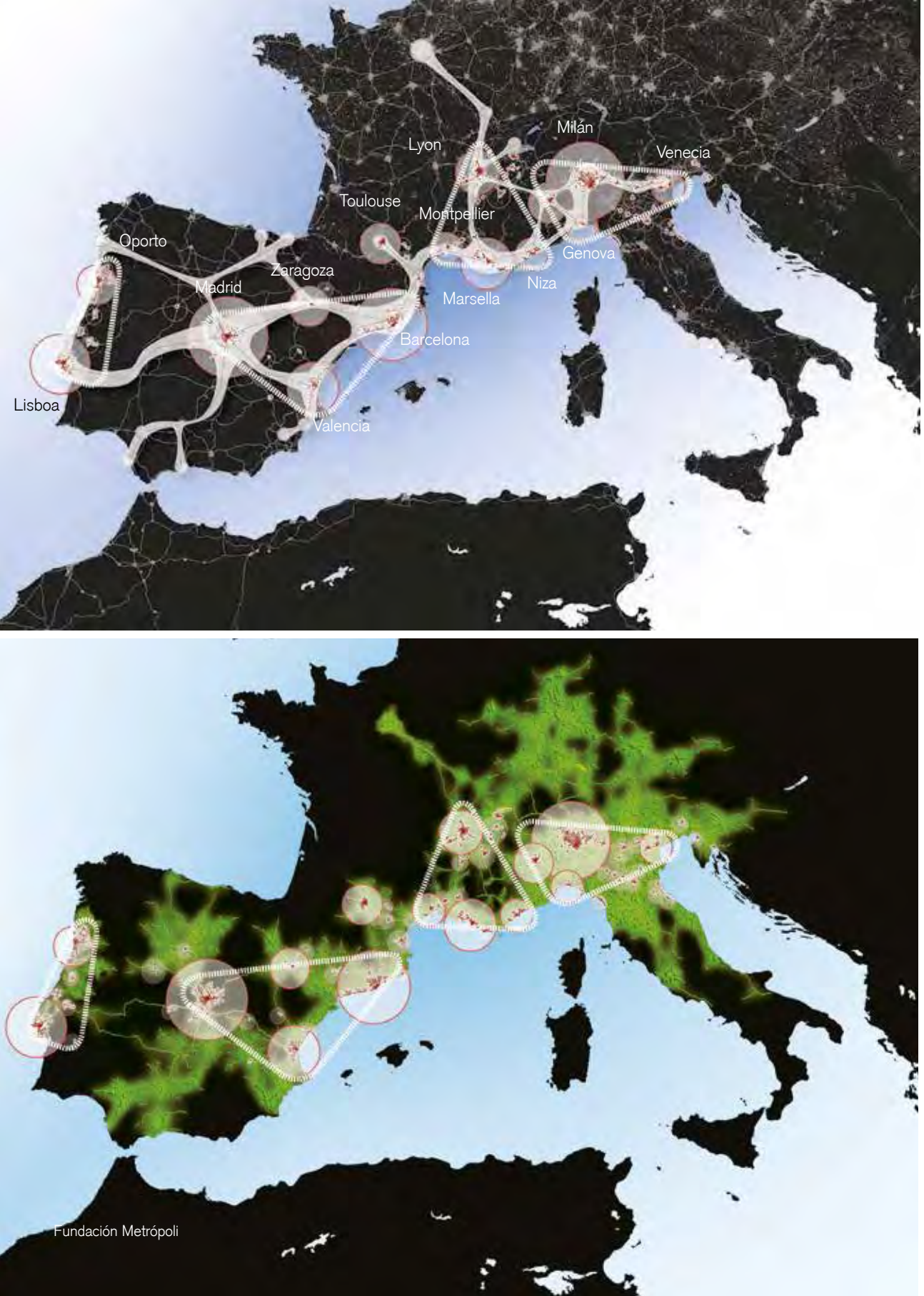
Jean Gottmann popularised the term 'megalopolis' in 1961 to describe the geographic dimension of bigger urban agglomerations, particularly those in Eastern North America. The metropolisation of a territory, however, requires more operative interpretations as a starting point to integrate diverse territorial scales. In order to distinguish the different situations created by large interconnected cities, the University of Pennsylvania's City and Regional Planning Department and Fundación Metrópoli proposed the notion of 'Supercities' in 2004 – complexes formed by the territorial aggregations of large urban agglomerations. This idea evolved into the 'mega-regions' concept, which highlights elements in identity, as well as internal and external articulation. The study identified the present and future roles played by 12 main urban nodes in the United States. Several nodes with diverse geographic circumstances and urban issues have been identified to lead the nation's economy, urban integration processes, and environmental strategies in a transformation scheme that will last until 2050.[208] As we shall see, the definition and observation of mega-regions allows for the integration of natural systems and urban settlements, providing a group of useful references to work on the new territorial scale.

## POLYCENTRISM: THE RELEVANCE OF MID-SIZED CITIES IN EUROPE

In the process of European integration, the region – sub-national administrative regions with significant differences between member states – has acquired a unique role. We can refer to this as a 'Europe of Regions'. However, if we consider official documents, this is not only a way of organising territories, but a construction process (although some would say reconstruction or recovery) of a territorial culture. The aim is to simultaneously encourage balanced economic development and maintain regional diversity. Regional planning is considered a crucial instrument for the future, shifting the territorial scales of reference, conceiving cities as systems of cities, assigning specific roles for rural areas, introducing nature conservation logic, and acknowledging the importance of urban regions. The EU considers urban politics as local issues that are exclusive to the jurisdiction of each member state. That being said, cities are increasingly present in European policies. One of Europe's most distinctive features is its dense network of cities, where many mid-sized cities have acquired extraordinary importance.[209]

The document 'Europe 2000+: Cooperation for European Territorial Development' considered this horizon and emphasised the importance of regional balance in the European Union.[210] The document states that territorial planning systems must fulfil those goals with awareness of the territorial impact of public finances, while sectorial planning must adhere to the accomplishment of broader goals. Typical of spatial planning, the main goals of the 'European Spatial Development Perspective, Towards Balanced and Sustainable Development of the Territory of the European Union' (1999) are guided by the philosophy of sustainable development: economic and social cohesion, conservation and management of natural resources and cultural heritage, as well as more equal competition in European territories. On the other hand, these goals have been jeopardised by rapid growth, urban congestion, and a suburban model regarded as unfit for the European context. In order to achieve them, three complementary guidelines defining the essence of the EU's spatial development policy were defined: (i) development of a polycentric and balanced urban system and strengthening of the partnership between urban and rural areas; (ii) parity of access to infrastructure and knowledge; and (iii) development and conservation of the natural and the cultural heritage through wise management.

The creation of new, regional-scale planning instruments in countries such as Italy and Spain reintroduced an integrated perspective into spatial planning.




Fundación Metrópoli

The European Diagonal. A Fundacion Metropoli initiative for the functional integration of Europe's southern capitals zcities.

They focused on the efficient organisation of territories observing diverse sensibilities and cultures, despite unified goals and languages. The European territorial integration process, through regional planning, is focused on the large issue of territorial differences. Diversity is the positive side of this issue, with inequality being the negative aspect. Spatial planning originated in response to the need created by an environment dominated by liberalisation, in addition to the increasing importance of market mechanisms in decision-making.

The appearance of new spatial planning instruments in the different Autonomous Regions of democratic Spain includes regional plans, spatial guidelines, and partial territorial plans. They are not only linked to environmental preservation, but are equally a result of the need to co-ordinate actions and sectorial policies. Territories are, in fact, constantly being organised in diverse ways; every sectorial policy has a specific territorial influence, whether they are water or forest management policies, coastal or railway policies, road or housing policies, or even the simple planning of the education and health systems. To say that there was no spatial planning in Spain is a fallacy. The territory was ordered through the random juxtaposition of municipal plans, as well as the overlap of poorly integrated sectorial policies and plans. However, what did not exist was spatial planning conceived with an integrated approach.

The variety in European regional planning has provided a useful range of references: the relationship between local and territorial structure, typical of the Anglosphere; the co-ordination among different administrations for investment through regional or state funding, such as in Germany and France; the ability to direct capital gains from new urbanisation and the environmental protection system, as seen in the Netherlands; or the new culture of the territory arising from the regional scale, exemplified by Italy and Spain.[211] Spatial planning, in its most diverse forms, is used in Europe to reach collective territorial goals. This allows action to be taken in instances where the private sector and the market cannot ensure regional transformations that are beneficial for its citizens.

In the Netherlands, for example, with its well-rooted environmental culture and a great civil engineering tradition, the structure of the administration intends to include all the factors that contribute to environmental policy. Here, the VROM (Ministry of Housing, Spatial Planning, and the Environment) has been placed in charge of the environmental policy. It warrants regional planning as the frame of reference for urban planning. In 1989, VROM published the first National Environmental Policy plan (NEPP), with a second plan published in 1993.

In 1997, a document aimed at integrating different environmental aspects of spatial planning was produced to review the plan's results. There is a consensus on the role of spatial planning in achieving environmental goals, although some experts are demanding a greater emphasis on a local approach – a decentralised decision-making process that allows local authorities to develop environmental policies suited to their conditions and that enable management of specific issues at a local scale. In 2002, the 'Fifth National Policy Document on Spatial Planning' was introduced. This led to many discussions on its infrastructure drive and its defence of a moderate growth rate, in relation to Europe's stringent environmental protection requirements. This document was crucial to the evolution of the regional planning approach in Europe. It made innovative contributions to the role of water in structuring territory and the need to manage climate change, particularly in a discipline where radical environmental preservation was opposed to those advocating for growth, including moderate growth. The Fifth Document is linked to the motto 'create space, share space'.

The Ranstadt is the Netherlands' central urban region, where the four main urban areas, Amsterdam, Rotterdam, The Hague, and Utrecht are concentrated, around a wide green lung. This green lung is protected from development and allocated for agriculture, leisure and environmental protection of valuable natural spaces. This ring has created a polycentric city-region, and serves as a reference for European regional planning. The Dutch experience stands out for its urban planning continuity with a focus on territory design, integrating a wide range of environmental issues and the necessary infrastructure for cities and territories. It accepts environmental legislation, standards, and control indicators as important instruments for environmental preservation.[212]

In 2011, the EU itself defined a territorial agenda aimed at promoting "an inclusive, smart, and sustainable Europe of diverse regions." The crux of the agenda was to combine economic growth with responsible territorial management.[213] It is a schematic document, stating principles and acts as a complement to the Europe 2020 strategy, which was drafted in 2010. Europe's 2011 Territorial Agenda considers cities, including those that are medium and small-sized, as crucial in addressing the main territorial problems by taking care of the most vulnerable groups, fighting climate change, defending biodiversity, and protecting natural and cultural heritage. The rich urban network is deemed essential in understanding the different regions in Europe and their interactions. In this context, EU policies foster an integrated and sustainable urban development process, while also ensuring the strength of local economies.



## GOVERNANCE: OVERCOMING POLITICAL AND ADMINISTRATIVE BOUNDARIES

Many planning systems that have yielded regulatory control of land use to municipalities without a regional reference framework have produced poor results. This is because local authorities are often very fragmented, with each competing to strengthen their own finances and attract activities. In open and competitive environments, where the attractiveness of the territory is a factor, coherence and consistency is required for administrative systems to coordinate sectorial and urban policies.

The city's governance refers not only to governance; it extends beyond the whole administrative structure and its political credibility to encompass social leadership and citizen action. Local bureaucracies often take shelter in regulatory complexity, which are beyond social control. Ideally, governance should involve the actual governability of a territory, in an environment of transparent information and participation in decision-making.

The recent evolution of North American urbanism is particularly noteworthy. Let us reflect on its suburban logic. For the greater part of the 20th century, the traditional American dream of the single-family house set in its own plot of land has influenced urban planning in the United States. In order for this lifestyle to be feasible, each family requires several vehicles. The desired scenario was to commute to the workplace via private vehicle, with cheap parking available at each location – be it the office, home, shopping centre, or gym. The construction of urban highways, coupled with the low cost of cars and fuel, encouraged this lifestyle and resulted in a sprawling city. Many concluded that this was an unsustainable situation with increasing congestion, pollution, and excessive land use. At the same time, the widespread decline of many urban centres was observed with great concern. Quality residential and office spaces had moved to the suburbs in segregated models, unable to address the urban imbalances derived from income inequalities.

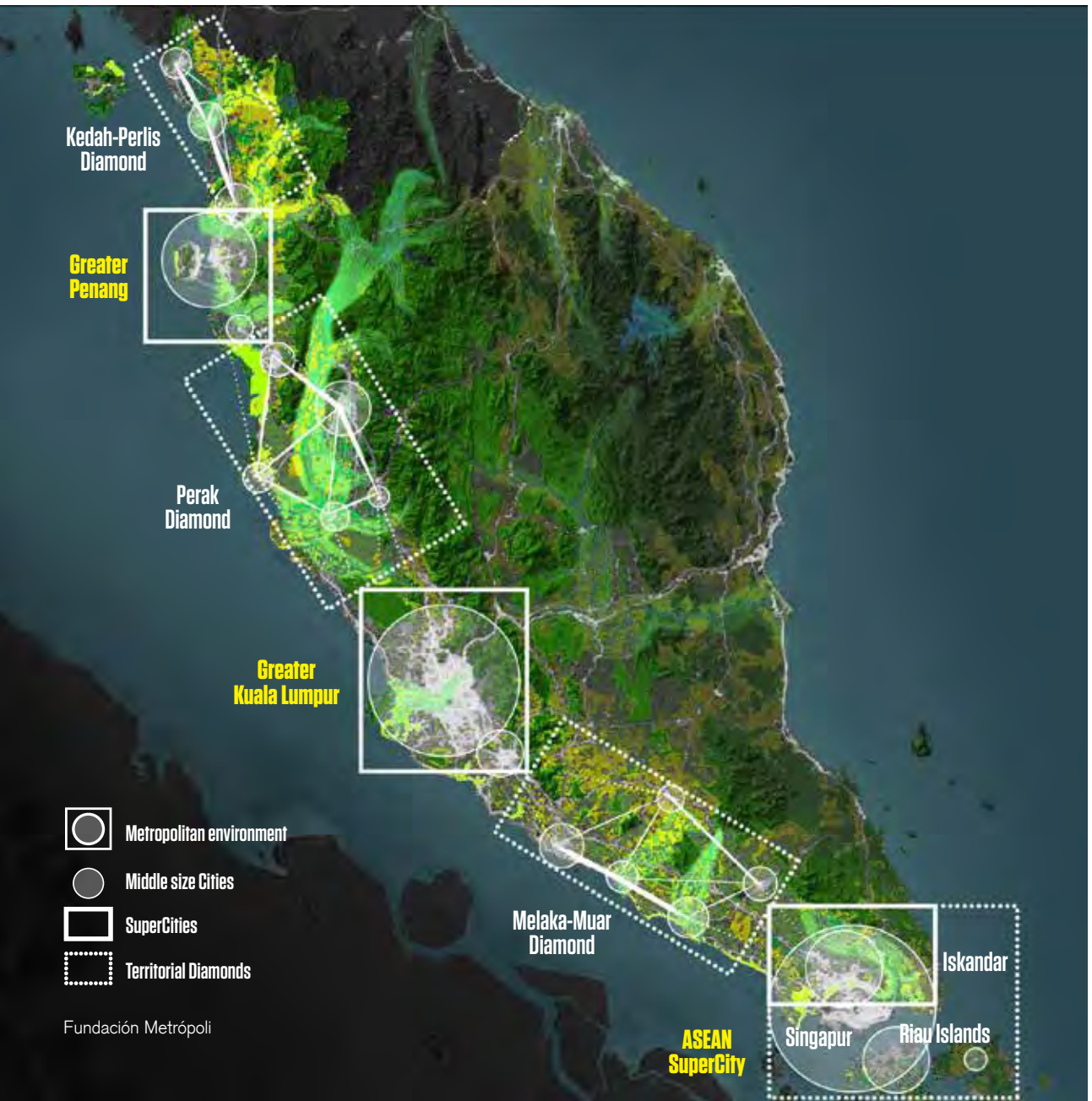
This lack of solidarity has fostered urban fragmentation, with each neighbourhood requiring its own facilities which are not shared with the less affluent parts of the region. Despite investment and improvement works, maintaining competitiveness and attracting economic activity have remained key objectives for many downtown regions. In many cases, they must provide services for the entire city, despite having limited autonomy to generate additional income. Even in dynamic cities that have been able to generate cyclical










The Malacca Straits Diagonal: A project of Think City and Fundación Metrópoli. Supercities and Territorial Diamonds in Malaysia connecting rural and urban landscapes. The Diagonal goes beyond administrative regions and nationals frontiers.

urban renaissance, only a portion of the neighbourhoods have improved, with many areas of the city bypassed and neglected. This applies to large cities such as New York, Chicago, Boston, Miami, or San Francisco; as well as mid-sized creative cities including Denver, Austin, or Phoenix. Without an integrated solution to transportation problems, the provision of adequate infrastructure, suitable housing options, solutions to other issues, and an overall sustainable urban future remains far-fetched.

One of the biggest contradictions in contemporary cities is the inability of municipal governments in developed regions to propose effective co-ordination systems. These regions are often fragmented due to opposing political and administrative points of view, where public and private interests clash. It is necessary to conceive structures that can govern the city-region effectively, and decisions cannot be taken based on ad-hoc interests. Many important choices regarding metropolitan allocation have been made by the market, without consultation with the urban stakeholders affected. It is thus essential to promote planning instruments that can address the city holistically, beyond traditional city council boundaries. A new generation of strategic and open plans which combine regional-scale greening and improvements to quality of life, are prevailing. Examples include 'Vancouver Greenest City 2020' (published in 2009), 'Copenhagen Municipal Plan' (2011), and 'Sydney 2030' (2013).

As we will see further on, the interest in planning the city-region was the main catalyst for sustainable urban development in the United States. This started as a quiet revolution promoted by growth management, which soon became an approach that utilised different urban techniques to achieve a more efficient and sustainable urban region. The success of managing existing cities is based on creative and suitable projects, with solutions tailored to each specific case rather than adopting generic solutions. On the other hand, the regional scale requires overcoming administrative limits; the adjustment of administrative structures to the scale and nature of urban projects will be crucial in the future. In Europe, however, few have attempted to address the unconducive effect of administration boundaries. Greater cooperation and interaction between state, regional, and city governments must happen. Countries such as France, Great Britain, and Germany are already attempting to adopt territorially coherent and efficient decisions through agreement and collaboration mechanisms.

This is the case for the city of Toronto, which has developed an exemplary process of administrative transformation and political organisation. The seven independent councils united to create a new metropolitan city, with a single Mayor and City Council. This represents a unique and democratic process of merging councils in a metropolitan area. One of the most important actions developed after the integration was the drafting of the metropolitan plan, which was successfully led by Paul Bedford. The city government was centralised while responsibilities and local taxation were reorganised. The seven pre-existing urban centres remained based around what used to be their own city halls, which were transformed into local service centres through a broad programme to consolidate and strengthen the central structures. Processes of this nature are obviously filled with tension – Canada has already experienced the controversial creation of Ontario's metropolitan area to facilitate the management of post-war development. This is a unique example that reflects the important role of dialogue and co-operation. It also demonstrates that without innovation, it is impossible to create great changes in cities, especially in their administrative field.

## LANDSCAPE AND NETWORKS IN THE CITY-REGION: *EUSKAL HIRIA* (BASQUE CITY) AND VALLADOLID

The first example of effective and comprehensive regional planning in Spain can be found in the '*Directrices de Ordenación Territorial de la Comunidad Autónoma del País Vasco*'[214] (Guidelines for the Territorial Planning of the Basque Country). This supra-municipal planning, regulated by the Territorial Planning Law 4/1990, proposed three tools: Guidelines for Territorial Planning, Partial Territorial Planning, and Sectorial Territorial Planning. The Guidelines for Territorial Planning, approved in 1997, organised Euskadi (Basque Country) into 15 functional areas. For each of the functional areas, there was a Partial Territorial Plan prepared by the Basque Government, in collaboration with the Provincial Councils and the affected municipalities. The development of these guidelines established the Basque Country as a polycentric urban region. Euskal Hiria (Basque City) does not refer to an existing geographic reality, but the expression of a project for the future. It is a political, economic, social, and territorial project intended to provide structure and coherence to the city-region, positioning it within a competitive international context. With it, the Basque Country can aspire to become a true city-region with a population of over two million people and a density of approximately 300 people per square kilometre. The scale of the Autonomous Region is similar to that of other urban regions around the world: metropolitan Miami covers a wider area than the Basque Country; whereas Sydney's city-region, with a population of over four million residents, has an area similar to Euskadi's (7,234 $km^2$).[215]

Infrastructure improvements enabled the Basque Country's population access to housing, employment, education, leisure, culture, nature, and small urban centres. In the new economy, operating on a global scale requires an extraordinary level of complexity. The sociologist, Saskia Sassen posited that for companies to operate globally, they require a network of highly specialised services such as intellectual capital, consulting, financial services, legal advice, marketing, new technologies, and transportation. This network of specialised services can only be found in urban centres of a certain size, that is, in cities and territories with a certain critical mass. This is possible in the Basque Country because of its rich and complex urban network. The scale of the Basque territory and its dense demography have also provided strategic value to a series of natural spaces – associated with its complex orography – that are connected to each other through a series of natural corridors. This has increased the global appeal of the

territory. The Basque Country can thus establish the critical mass needed to face the challenges of the new economy. In order to achieve this, it is also essential to establish synergies that stem from the organisation of the whole territory. The current update of the regional vision, the 'Euskal Hiria Net' strategy, highlights the uniqueness of the Basque territory by prioritising the relationship between the urban, rural, and ecological networks that define it. On the one hand, this creates a visual order of the territorial components. On the other, it emphasises the integration of natural and urban spaces, focusing on the aspects that connect the city-region.[216]

Therefore, the Euskal Hiria presents an opportunity to explore complementary interrelationships between the Basque capitals, as well as with other urban centres that make up the regional network of cities. The key is to maintain the identity of each city, town, or village, to reap the benefits of a competitive and balanced city-region. With the three Basque capitals acting as a central hinge, the goal is to attain better functional and economic integration within the region and with other proximate cities such as Pamplona, Logroño, and Santander in Spain, as well as Bayonne in France. It is critical to develop complementary urban profiles based on the unique identity and strengths of each city that is part of this polycentric system. If taken in isolation, none of the cities in this system can be considered significant enough on the international stage. None of the Basque cities has enough critical mass to be able to offer the network of specialised services, infrastructures, and options that successful global cities do. However, the structure of the Basque territory has important and unique competitive advantages:

- It is located at the intersection between the Paris-Madrid corridor, as well as the Ebro and Cantabrian Coast axes.
- It has a polycentric system of capital cities: three major urban areas evenly distributed close to each other, with complementary and distinctive profiles.
- It hosts an attractive network of mid-sized cities that allows urban and rural integration, with urban cores that allow for a balanced territorial structure and social cohesion.
- It has an excellent network of rural centres with their own identity and morphology. They are essential to local cultural heritage, with 69 highly-valued historic centres.
- It is home to a rich network of natural areas interconnected with urban centres. Protecting the biodiversity and quality of the landscapes provides leisure options within the territory.



The Basque Country has a strong economic identity, based on an entrepreneurial spirit and a capacity to adapt to changes and overcome difficulties. The unique structure of its territorial government is complemented by its strong identity and its society's sense of belonging. Euskal Hiria and other European regions share similar characteristics, such as being polycentric and possessing a level of coordination between all components of the territory. However, given its geographic location, Euskal Hiria can become an important hinge between the European Atlantic Arc and the most dynamic areas in Europe. Nevertheless, this is only possible if its cities' network, connecting infrastructures, and cooperation with neighbouring territories, continue to improve.

Valladolid, the capital of Castile and León, has established itself as the biggest city in the area; a dynamic metropolitan area with an important industrial and service base. The need to provide a unified response to the supra-municipal area's problems, which are often in conflict, led to the drafting of the 'Planning Guidelines for Valladolid and its Surrounding Areas'.[217] It is one of the few instruments of its kind to be approved in Spain. The goal of the guidelines was to introduce rationality and efficiency criteria into an urban system conditioned by developments, often conceived exclusively on a local scale without specific territorial references. It represents a plan for an urban agglomeration that was becoming a small city-region, with a polycentric and dynamic system surrounded by nuclei of different sizes – 23 municipalities in 900 km$^2$, with a population of 415,000 citizens. While the central city, Valladolid, has experienced a dwindling population for the last two decades, its surroundings have undergone spectacular growth.[218] It is a growing metropolitan area surrounded by small towns, such as Laguna de Duero (adjacent to Valladolid) with over 22,000 inhabitants and Arroyo de la Encomienda with 16,000. While over 90% of the region's population lived in Valladolid in 1990, today only approximately 75% remain inside the city, with a continued outflow of residents towards the agglomeration. The central municipality still hosts most of the workplaces, with periphery centralities, such as the Boecillo Technological Park, employing over 5,000 people. Meanwhile, the Rio-Shopping Centre, with over 120,000 m$^2$ of retail surface, illustrates the relocation tensions characteristic of many mid-sized European cities.

The Guidelines were thus confronted with a change in the urban model – the transition from a compact city into a complex system of urban spaces, with diffuse development in an unstable global context. The Guidelines rely on the evolution of the urban agglomeration, proposing a polycentric urban scheme unfolding as a 'Continuous Urban System' and a 'Discontinuous Urban System'. This is

aimed at strengthening the former's compacity and controlling the dispersion of urban functions within the territory. This has fostered a polynuclear urban development, establishing intermediate centres around the central city, while also redefining the existing polarities (urban centre, techno park, airport, and activity corridors) that can be converted into opportunity spaces. These will be the location for the large, city-region scale facilities, with quality urban design projects. Improving the road network, fostering an integrated transport system, and constructing the high-speed train infrastructure to Madrid, will directly influence Valladolid's future projects.

Each municipality within the scope of the Guidelines has a specific historical identity, rooted in its unique geomorphological, landscape, and typological context. The proposed image consists of a complex territorial mosaic, where the urban intertwines with the agrarian landscape, as well as a diverse group of natural spaces, hills, forests, and rivers. The system of infrastructure networks and services connects these spaces, providing them with accessibility and functional quality. The administrative control and the required infrastructure were considered important instruments for the selective limitation of urban development. They set out a basic structure for spatial planning criteria at smaller scales and aim for long-term quality.[219] However, this was jeopardised by the lack of coordination among the area's municipalities. This form of urban expansion is also alien to the territory's ecological and landscape values, and was abruptly halted by the 2008 real-estate crisis in Spain.

The Guidelines understand the landscapes' values and places as vital to the urban agglomeration's future. First, the most valuable or sensitive environmental spots are highlighted, establishing a strict protection system. Second, the project reviews the green corridor and park system concepts to create a network of open spaces. This allows the public to enjoy the landscape, the countryside, and their cultural heritage, as well as ensuring the protection of natural resources. The landscape system, including its river networks, hills, forests, and unique rural spaces, offers a spatial matrix for future urban development opportunities. The most valuable places are systematised and interpreted. Rivers, forests, rural areas, and certain linear elements in the territory such as the dense and complex system of unused cattle tracks, or the set of irrigation canals, streams and brooks, abandoned railway tracks, and underused rural paths, have provided an amazing initial structure for the proposed network. By including certain nodes as the origin or destination point for the linear structure's corridors, the use of connective open spaces with great territorial coherence can be enhanced. The set of traditional compact settlements is the true heart of the system. They are the current centres, but above all they are also the future activity and service centres of a territorial model aimed at redirecting urban sprawl towards the agglomeration continuum. This is where infrastructure can be improved and the urban system can become more efficient.

As demonstrated by both Euskal Hiria and Valladolid, in the contemporary city-region, the interpretation of the landscape in relation to the territory enables a certain level of coherence to its shape and structure. The landscape facilitates a structural understanding of the shape of the region, while its physical and geomorphological substratum allows us to manage its large scale. Despite the current complexity of the urban system, it is still viable to maintain the landscape's legibility in the city-region. This can be achieved by understanding the landscape substratum, human settlements, infrastructure, and past interactions with the landscape. Therefore, the structure of the future city is based heavily on its landscape. Nevertheless, for it to function effectively, rigorous and innovative efforts in planning are required.

## NEW TERRITORIAL SCALES: COPENHAGEN-MALMÖ AND COLOMBIA'S CARIBBEAN AND SANTANDERES DIAMOND

A simple glance at some of the world's most innovative urban areas demonstrates projects capable of integrating different scales, based on a long-term vision with a regional perspective. This is shown in London's Thames Gateway or in the Øresund Region project centred in Copenhagen and Malmö. Both projects share a great vision, with a clear geographic impression and aspiration to lead profound urban and regional transformations. The projects involved the regeneration of the Thames' margins, from London to its estuary; and the revitalisation of the unique Oresund strait between the Baltic and North Seas. Both have since been reinterpreted globally in the search for diverse natural, rural, and urban spaces through territorial development. In both cases, research and the discovery of territorial opportunities fulfilled the strategic function of co-ordinating sectorial initiatives. It is, however, the spatial reference that becomes the competitive advantage as it stimulates interactions, as well as strengthens management and co-ordination structures.

With a population of around 3 million, the area informally known as the Loop, which encompasses Copenhagen and Malmö, is an example of a regional vision overcoming traditional administrative limits and national borders. Both cities share a special sensitivity towards urban sustainability issues at all levels.




Colombia's Caribbean Diamond. This initiative was awarded the "Most Innovative Project" at the 2015 World Smart Expo of Barcelona Award. It was led by Findeter Development Bank and designed by Fundación Metrópoli and Microsoft. Metrópoli del Mar and Cartagena de Indias.

The construction of the Øresund Bridge connected the two cities via road and railway, expanding living and working opportunities in a new bi-national metropolitan environment with strategic complementarities. This provided opportunities for the shared use of airports, transport systems, university systems, port infrastructure, and integration of the labour market. As a result, Copenhagen, Malmö, and their surrounding regions were able to attain a global dimension and develop world-class initiatives in each one of the cities. This includes advanced implementation programmes for renewable energy, sea and canal water treatment, bioclimatic architecture, urban renewal projects, eco-community development, intensive bicycle use, and opportunities for the shared use of large facilities. Both cities share a commitment towards sustainability, experimentation, and knowledge exchange in this field. The ultimate aim is to become a global example, while allowing experts and corporations operating in this territory to achieve international recognition. This advanced vision of sustainable urban planning led to the 2012 Lee Kuan Yew World Cities Prize being awarded to Malmö and Copenhagen.

This same regional vision is also key to the Caribbean and Santanderes Diamond, a project led by Findeter and conceived by Fundación Metrópoli with Microsoft. It draws upon precedents such as Bintan Eco Island, a development plan promoted by Singapore on Indonesia's Bintan Island. The project transcends conventional planning by using territorial analysis to address the region as a whole, while achieving the initial aim of developing tourism infrastructure for the entire region.[220] The approach and strategic guidelines for Bintan Eco Island originated in an ambitious regional plan known as the Malacca Straits Diagonal, which stretches from Penang to Singapore, passing through Kuala Lumpur, Iskandar, and several intermediate cities. This area, located strategically in Southeast Asia, is home to 16 million inhabitants. Its future depends upon a shared, integrated vision, thus transcending traditional projects that are specific to cities or countries. In recent years, the governments of Malaysia and Singapore have discussed building a high-speed rail connecting Singapore with Kuala Lumpur. This high-speed rail could potentially extend northwards and reach Penang by strengthening an urban development axis that could economically lead large areas of the region.

Landscape and territorial structure are key to the methodology of this new generation of regional scope projects. This is the case for the Caribbean

and Santanderes Diamond, a project that integrates cities and departments (districts) in the Colombian Caribbean. The aim is to establish an area in the departments of Santander and Norte de Santander with territorial coherence and strategic complementarities. The Magdalena River shapes an ecological corridor connecting the Caribbean with the country's interior, especially the Santander department. Two of the department's cities, Barrancabermeja and Bucaramanga, will also discover a new dimension via their new connection with the sea and wider world.

What is truly unique about this project is the assumption of a new territorial scale, overcoming both local and departmental visions, which typically have limited application of new sectorial policies that outline the design of future strategies. The Diamond has contributed a new governance and cooperation scheme, based around a shared project that goes beyond administrative and political boundaries. Crucial to this initiative is the co-operation between Colombia's Development Bank (representing the National Government) and the departmental governors of Atlántico, Bolívar, Sucre, Córdoba, Antioquia, Magdalena, Cesar, la Guajira, Santander, and Norte de Santander. Collaboration with leaders in the cities of Barranquilla, Cartagena, Barrancabermeja, Bucaramanga, Santa Marta, Riohacha, Valledupar, Cúcuta, Sincelejo, Montería, and Apartado was also extremely important. More than 2,000 leaders participated in the City-Territory Forums, with 249,200 references obtained; it was this broad consensus that led the development of the Diamond. However, it was the process itself that enabled a co-operation framework between the public and private sector, which previously did not exist. The identification of strategic projects enabled public-private partnerships, established on a solid foundation of territorial and economic research.

The Diamond is home to a population of over 14 million. Unlike conventional city-by-city planning, the future strategy is conceived as a system of collaborative relationships. One of the project's main goals is the significant improvement of the territory's competitiveness. To accomplish this, its strengths have been augmented and strategic opportunities identified. During the baseline research and the design of proposals, the territory itself was considered as the main factor of competitiveness. One unique trait of this initiative was the collaboration with the technology company, Microsoft. This has allowed the use of digital technology to encourage collaboration between the different stakeholders involved.

Also crucial to this approach was the consideration of the territory's characteristics in terms of its landscape, in addition to the different scales of interaction associated with specific territorial narratives. This served as the spatial substratum to create synergies, foster cooperation among cities and territories, as well as identify future projects for the region.[221] In the process, some hidden territorial characteristics were discovered. Countering the emphasis placed on urban network nodes, the Diamond project has carefully observed the landscape's ecology with a global vision. The Caribbean Coast and its distinctive qualities were highlighted, namely its coral systems, swamps and wetlands, mangroves, small islands, estuaries and deltas, cliffs, and beaches. The Magdalena River has been analysed as an axis capable of structuring the territory in relation with the urban and rural systems. The interior rural spaces have faced uncertainties in Colombia's recent history, but they possess extraordinary potential for development. The Diamond's approach allows us to discover the territory's intermediate scale, highlighting the distinctiveness of its core – the Caribbean Delta. This approach has guided the entire project from a territorial and urban point of view.

The Caribbean and Santanderes Diamond project, bestowed the World Smart City Award in Barcelona's 2015 Smart City Expo, is inspiring new methodologies, projects, and collaborations in the region. It is also quickly becoming an example for the organisation of urban systems on a regional scale, both in Colombia and in other parts of the world. The integration of territory and technology has become an increasingly prominent component in our society.

# 08

# ECO-URBANISM

- # SUSTAINABLE TERRITORIES, A NEW URBAN HORIZON
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The greatest crisis of our society, and also of the contemporary city, stems from the lack of intelligent dialogue between humanity and nature. Never has humanity developed such an immense potential to transform nature, nor have the limits of our small planet been so clearly perceived. Since the Rio Summit in 1992, concern for the environment has become globalised and a new ethical commitment to sustainability has begun to take shape. While cities are among humanity's most wonderful inventions, they simultaneously reveal our greatest contradictions.

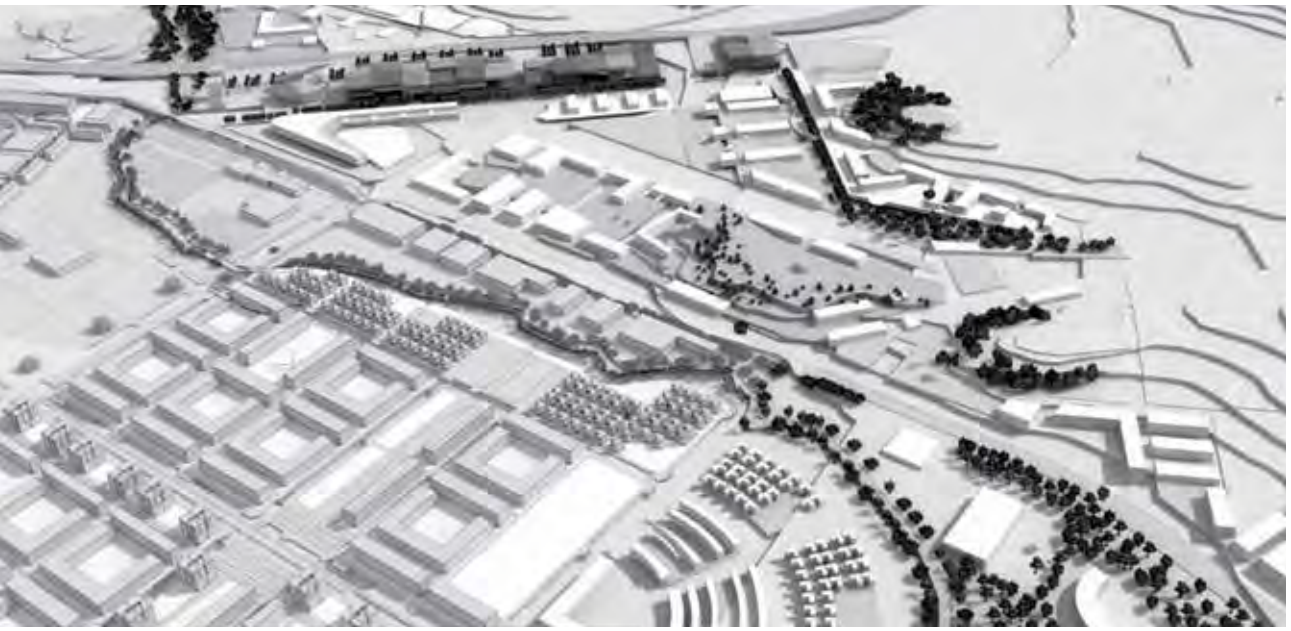
In recent decades, a strong ecological conscience has influenced professional viewpoints and shaped specific projects. The contributions of McHarg in 'Design with Nature', the United Nation's Agenda 21, and more recently the 2013 European Urban Charter, have been very valuable.

Specific experiences, however, point the way towards advancing through a difficult path filled with contradictions. This chapter will present cases of Curitiba, Vitoria, and Copenhagen leading the way forward. We also present the New Urbanism and the Landscape Urbanism movements. The design of eco-neighbourhoods or eco-communities allow us to holistically experiment with urban metabolism, as inspired by Kisho Kurokawa's symbiosis philosophy.












The City of Sarriguren in Pamplona. One of the few built eco-communities in Spain that received the European Prize for Urbanism and the UN-Habitat Award for its best practice. Emphasis was placed on their bioclimatic architecture and sustainable urban design.

## SUSTAINABLE TERRITORIES, A NEW URBAN HORIZON

Over the last decade, the concept of sustainable development has triggered many cultural, political, and scientific debates on environmental issues. This is mainly due to its simplicity and the proposition's rational appeal about the global challenges created by humanity's exertions on the planet.

If we agree that the current crisis of the modern world is related to the crisis of our disconnection with nature, we will soon realise that cities and the prevailing economic development model are at the heart of this crisis.[222] The discourse on sustainable cities then becomes about a new urban horizon.

It was during the 1960s when widespread awareness of adverse environmental impacts and their risks emerged. There was a clear perception about the depletion and irreversible deterioration of natural resources, and the increase in global pollution levels. At an early stage, the environmental crisis was observed from a neo-Malthusian perspective: where the built environment and demographic growth would grow exponentially at the expense of finite resources and the carrying capacity of the planet, if certain limits were not imposed.[223] However, the ecological perspective provided a more compelling narrative, with works by Rachel Carson and Barry Commoner explaining that the growing environmental crisis was due to the existing development model.[224] Hence, new systems, thoughts, and lifestyles must be adopted to avoid an impending disaster of our own doing.

The negative effects of development reached a global scale when the United Nations Conference on the Human Environment was held at Stockholm in 1972. A group of economists and scientists, including prominent figures such as Nicholas Georgescu-Roegen and Herman Edward Daly, began work to define the basis of a 'human economy'. Environmentally-led development or ecocentric growth began to take shape and gain momentum.

The 1970s energy crisis made some of the ideas that were either directly or indirectly linked to environmental consciousness, popular in town planning. For example, in 1973, Ernst Friedrich Schumacher's 'Small is Beautiful'[225] conceived a new philosophy for economic development against the gigantic and lumbering industrial systems developed after World War II.

Through observing society's impact on nature and its consequences for future generations, the Brundtland Report (1987) was produced and focused on short and long-term goals for local and global issues pertaining to the environment. Its

sustainable development proposal was adopted internationally and established a canonical definition, which is still used today: "sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs".[226]

The EU Expert Group on Urban Environment further clarified, defined, and emphasised in its European Sustainable Cities policy report: "Sustainable development is thus a much broader concept than environmental protection. It implies a concern for future generations, and for the long-term health and integrity of the environment. It embraces concern for the quality of life (not just income growth), for equity between people in the present (including the prevention of poverty), for inter-generational equity (people in the future deserve an environment which is at least as good as the one we currently enjoy, if not better), and for the social, health, and ethical dimensions of human welfare. It also implies that further development should only take place as long as it is within the carrying capacity of natural and human systems. However, addressing the sustainable development agenda provides new challenges for the integration of urban policy within holistic frameworks".[227]

In post-industrial society, there is a separation between humans and nature, as well as a widening gap between rich and poor countries. The prevailing concept of growth-based development is being re-examined,[228] as the compatibility between permanent improvements in the quality of life and the preservation of natural resources has become paradoxical and necessitates a thorough review. Although still linked to the idea of progress, development should acquire a qualitative rather than quantitative dimension, with the capacity of introducing improvements through science and technology, and assisting with economic, social, and political structures.

International institution, ranging from the European Union to the (now defunct) World Commission on Environment and Development, agree that cities play a decisive role in achieving a more sustainable world. More than half the planet's population currently lives in urban areas. The concentration of populations, human activity, production, and consumption in cities greatly intensifies the manifestation of environmental problems. The ecological footprint of cities is immense, and their influence goes beyond their supporting territory or hinterland. Their impact has been verified through energy consumption and carbon dioxide emissions. Cities may seem to threaten the natural world, but they are an important resource in their own right, and one of the most important expressions of human development. They offer one of the most exciting test beds to find meaningful solutions to global environmental challenges.



As observed over the last few years, cities have been able to implement global-centric policies and involve their citizens in decision-making, thus contributing to an overall sense of collective responsibility. However, cities have also been subject to the forces of globalisation, which have broken traditional territorial links, local co-operation, and the city's ability to adapt to its surroundings. The severance of these historic links and structures has produced a generic city model that occupies space in a sprawling and anarchic manner. Our cities' richness and diversity are seriously endangered. Hence, the 'think global, act local' slogan could refocus a practice grounded in acknowledging differences, starting with the recognition of local and regional governments. These new approaches can gradually find their way into cities, such as Curitiba's plan in 1989, Seattle's in 1996, or Tokyo's in 1998.[229] However, except for outstanding cases, cities continue to grow with models inspired by the industrial age. These cities are spurred by machine-like growth and production-driven logic, with little more than a nod to sustainable principles.

Diverse attempts to measure and describe the use of resources taking place in a city through 'environmental indicators' have been developed.[230] The use of such indicators and urban ecology observations has either led to the establishment of certain limits or a refocusing of goals. These actions aim to correct certain aspects of existing urban models, such as making them more energy efficient and aligned with natural processes. To achieve resilience, several principles have been developed to guide urban design and transformation practices that ensure healthy environments, inhabitants, and the regenerative capacity of urban ecosystems.[231]

Against an assortment of urban spaces, each uniquely framed by its geography, culture, and the effects of globalisation, there is a need for benchmarks to produce inspiration. Relying on the rich diversity of historic European centres, the 'compact city' is probably the urban model that has found the greatest acceptance as a sustainable urban form. Its compact configuration provides access to public services, encourages public transportation, and enables the efficacy of urban infrastructure. Furthermore, it encourages energy savings, mixed uses, urban life, collective identity, and social cohesion. As observed by Jane Jacobs, the traditional compact urban models also include different architectural typologies and urban spaces that encourage social relations. Urban ecologist Salvador Rueda cites the Mediterranean example as an ideal compact, continuous, and complex urban model.[232] The same advantages can be found when adhering to a polycentric or 'decentralised concentration' urban growth model. Despite these examples, it is

impossible to isolate and establish a unique criterion for urban models that are sustainable and those that are not. Factors including identity, relationships with surroundings, scale, and formal articulation, are all aspects that are impossible to detach from a specific case.

Nobody can argue that one painting is better than the next, simply because it has more paint, or that it has more green than blue. Like urban models, they are subjective and contextual. What happens when the work is collective, complex, and is built over time? In the following sections of this chapter, we will explore some milestones in the challenges facing the design of sustainable cities and territories.

## ECOLOGICAL PLANNING: IAN MCHARG

Planning based on ecology places the city in its regional context and considers its natural traits. Furthermore, the ecological perspective demands that more planning and attention be given to the spatial transformation imposed by nature in urban settings. Although its practice has not been widely implemented, we must acknowledge that before the idea of sustainable design became mainstream, there was already a planning tradition based on ecological precepts.

In 1940, Benton MacKaye proposed the concept of 'applied human ecology' in 'Regional Planning and Ecology'. MacKaye aspired to substantiate planning by weighing the relationship between natural resource extraction and human social behaviour models. The key was to conceive planning on a regional scale and root it in ecology, rather than solely driven by socio-economic numbers. MacKaye conceived and designed the Appalachian Trail in 1921, a grand trail that passes through (mostly) natural areas across 14 states in the eastern part of the United States. In this pioneering work, MacKaye applied the principles of regional planning, and later recognised the relationship between humans and nature as one. He presented proposals for the preservation of wild spaces and the organisation of recreational activities to revive the damaged economy of existing farming communities.

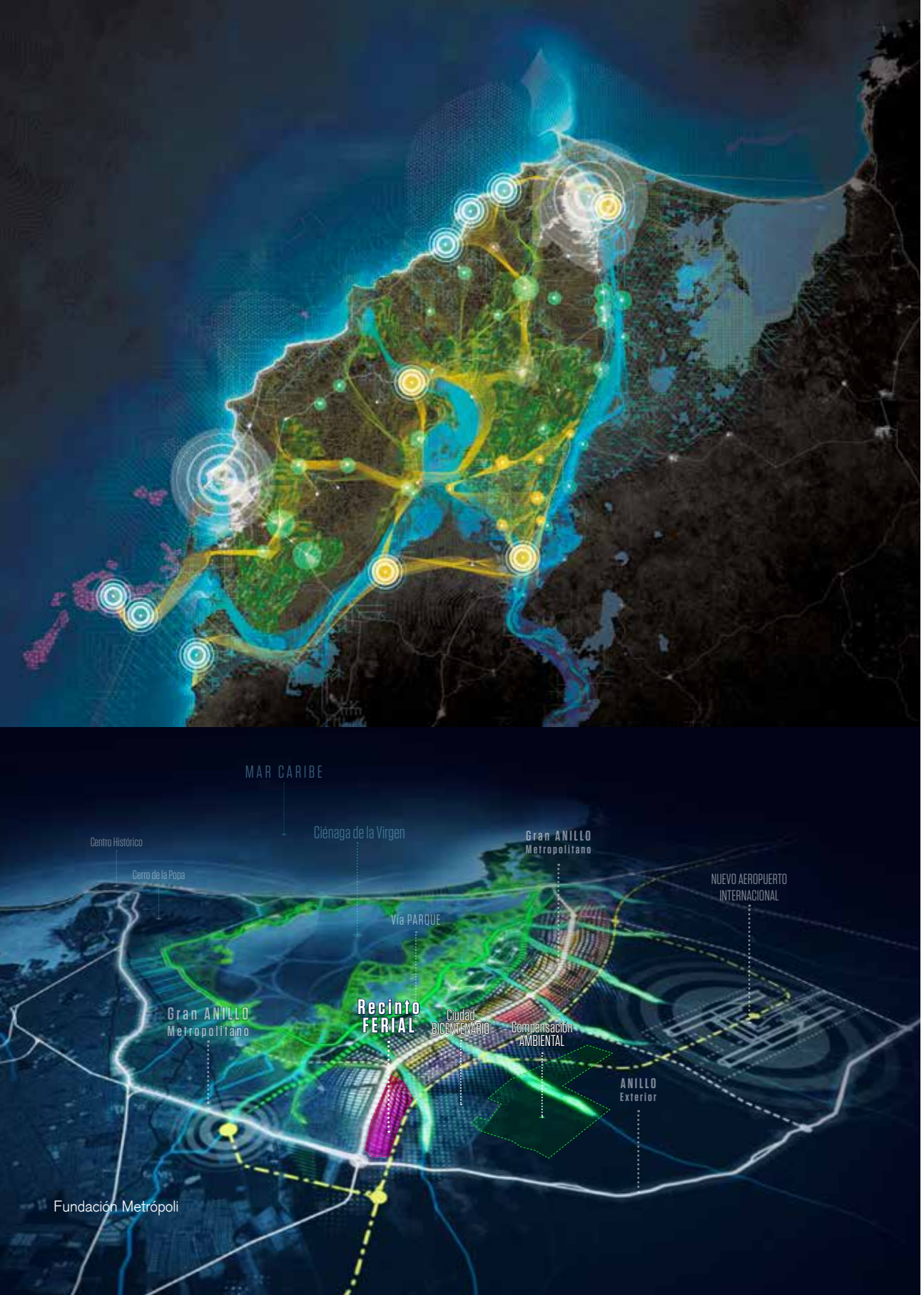
In the 1950s, ecologists such as Eugene P. Odum highlighted the relevance of spatial planning based on a deep understanding of ecological reality.[234] The methods, techniques, and tools of ecological planning or landscape ecology (until very recently limited to the observation of the physical environment) acquired relevance and were repurposed to fulfil 'new' goals. These changes were not brought about to replace traditional urban planning, but to increase its value through the adoption of a scientific perspective that studies the territory and landscape, as well as the processes of an ecosystem and its relationships with humans. In fact, modern regional and urban planning techniques were enabled by the development of an analysis capable of relating soil types and landscape forms with the appropriate use for each place, thus establishing an instrument for territorial design.

In 1969, at a time when considerations of nature started becoming a prerequisite for urban planning, Ian McHarg published 'Design with Nature', probably the most influential essay on ecological and landscape planning.[235] McHarg proposed overlay mapping, a technique that relates the shape of the landscape with its land uses. It is based on a chronological organisation of the territorial inventory (the layer-cake model), which allows geographic information to be mapped and structured coherently. Encouraged by the scientific method, McHarg began his analysis on an ecosystem census. He described its natural processes: stressing its limitations or transformational factors, identifying elements or processes representing values (the essence of the suitability analysis), and determining their constraints and transformational opportunities. His analysis attempted to single out indicators for stability or instability that were linked to biophysical information, and sought 'maximum social utility'. This assessment established a link between the intrinsic nature of the land and its possible uses. All of this analysis was used as a decision-making tool and carried out within a pre-planned logic. The application of this method led to other techniques, such as the LSA (Land Suitability Analysis), which proved very useful for spatial planning decisions.

In Europe, where the land has a long history and has been civilised for ages, the landscape cannot be seen without the effects and influence of humankind. It is identified and determined by its anthropic and historic landscape. A reliable interpretation of territory includes a comprehension of both nature and culture, and the interaction between them. The goal has always been about adapting the surrounding external physical environment and the internal biological habitat, whilst also detecting potential threats.[236]

Another ecological planner, Richard T. Forman, developed the 'Land Mosaic' theory – a tool that describes the superposition of natural, rural, and urban spaces. It analyses changes and verifies the deterioration of a landscape to find the best possible co-existence between land use and nature.

When journalists asked McHarg how he had managed to save the township of Woodlands (built between 1970 and 1974 near Houston) from the floods




Metrópoli del Mar and Cartagena de Indias. The integration of urban development and natural ecosystems into the new territorial scale.

that engulfed nearby neighbourhoods, he responded by saying that he simply thought about the water's direction of flow when it rains. Today, the relationship between the urban form and the natural world means that cities must be built with consideration of their natural environments – their systems, behaviour, and boundaries.[237]

Norwegian philosopher Arne Næss distinguished the difference between 'deep' and 'shallow' ecological thinking, which depended on the rejection or acceptance of either development or environmental interests.[238] From a deep ecology approach, compromised solutions are acceptable. Hence, the concept of sustainable development belongs to a shallow ecology, questionable for its utilitarian bias and values. Næss advocated radical changes. Can our current industrial and technological global culture be redirected to form a positive integration with nature? The diversity of ways to understand the relationship between humankind and the environment generates conflict. It is not only the higher impact industrial activities that generate conflict, activities such as mining, logging, fishing, hunting, or industrial agriculture, that are subject to contentious debate. Many professionals think that the best answer lies in international-level regulations, but we have seen how difficult it is for many countries to honour such agreements.

McHarg left a great legacy in the rationalisation of decision-making and urban planning, basing it on site conditions, natural values, and social costs. He trained a whole generation of landscape architects in the University of Pennsylvania and has always advocated searching for creative solutions. 'Design with Nature' provides us with a new sensibility and is a valuable reference for employing ecological guidelines in urban design.

## BUILDING A NEW DISCIPLINE: FROM AGENDA 21 TO THE NEW ATHENS CHARTER

In 1992, the United Nations Conference on Environment and Development (the Earth Summit) was held in Rio de Janeiro. Among its results were the approval and endorsement of Agenda 21 – a broad programme designed to encourage sustainable development principles in the 21st century on a global scale effort through local level action. One of its principles is to encourage the role of local entities by increasing their environmental responsibility. To achieve this aim, it recommends that each community, local or regional, develop

its own programme (known as Local Agenda 21) that conforms to the ideals of Agenda 21. Since the Rio Declaration, many organisations, municipalities, and cities have developed a wide number of programmes that advance the ideas of local sustainability. The European Union promoted the Aalborg Charter in 1994, the first initiative by the EU for the local implementation of the Rio Summit principles: The Charter of European Cities and Towns Towards Sustainability. The Charter boasts 330 signatories, of which 80 representatives were from local European authorities.

The Rio Summit noted the difficulty of reaching global environmental goals without the support of local authorities. As such, Agenda 21 tried to involve different members of local society into developing mid and long-term environmental actions. It was conceived as a programme of specific actions within a framework for broad citizen participation.[239] Thus, we face the genesis of a true planning tool that can influence the physical space and its management – its guiding principles originating from the concept of sustainable development. The local agenda provided cities with new aims, made them pay attention to the places they govern, and gave them a new perspective by proposing future urban challenges in a comprehensive manner beyond traditional sectorial considerations. They also offered an unusual space for social participation. However, despite the positives as an inclusive planning tool, the local agenda was more effective in providing diagnosis rather than solutions to the problems at hand. They lacked spatial dimension and their deficiencies in the effective tracking of proposals have led to the tool's discrediation. Nonetheless, there is still validity to its goals, as stated in the 1996 European Sustainable Cities report: "The sustainable city process is about creativity and change. It is about the substance of policy as well as policy methods. It challenges traditional governmental responses and seeks new institutional and organising capacities and relationships. The notion of sustainability is dynamic and evolving, and will change over time as the understanding of the local and global environment becomes more sophisticated and shared."

We have noticed that several municipalities, regions, and countries have developed their own local agenda, where sustainability has been an essential element of their comprehensive future-oriented project. Hence, we have now come to an important stage where it is possible to reflect on Agenda 21 and assess its achievements.

The issues considered in Agenda 21 that are directly linked to the responsible use of natural resources, such as water management, renewable energies, pollution emission, and waste management, are common issues in all municipalities. The most advanced cases try to include, in some way, the material flows of the city, so as to influence its consumption patterns.[240] Adjusting supply and demand, achieving maximum resource management efficiency, controlling the material cycle, minimising emissions, and reducing impact and waste products are requirements needed for economic strategies, quality of life, and honouring international agreements regarding pollutant emissions. When addressing the environmental context of cities, there have been improvements in the diagnosis of urban problems and the redefinition of main goals to produce positive results in many cases.[241] Agenda 21 is currently re-orienting local strategies towards the fight against climate change. This new approach has many common goals with Smart City programmes, emphasising the importance of applying new technologies in the management of urban services. The issue of applying sustainable principles to urban environments has generated a broad debate that has crystallised in the form of many institutional documents, of which two drafted by the European Council of Town Planners stand out.

In 2002, the Council proposed a simple and robust guide for urban planners called 'Try It This Way: Sustainable Development at the Local Level'.[242] Its noteworthiness lies in its conception as a checklist, aimed at preparing strategies and evaluating proposals without offering conclusions, contributing planning references, proposing requirements, and monitoring processes.

Firstly, it considers aspects of sustainable design: water, air, noise, soil and land, nature and ecology, energy, waste, heritage and regeneration, risks and threats, and social quality. These are classic issues of the ecological planning approach. The second part defines the process' steps: adapting policies, designing the plan, obtaining planning approval, implementing the plan, and managing compliance and monitoring, with the clear intention of encouraging assessment of the results. Concepts are formulated to determine their applicability.

Let's take water, for example. The first goal would be to avoid disrupting the water system, whether above or below ground. This goal has design consequences and they become more apparent when we explore the issues involved, thus we must not only consider the retention or accumulation of water, but also its infiltration, based on soil permeability, so aquifers can be filled. Therefore, waterproof pavements must not cover everything and retention areas must be maintained. We must then consider water's relationship with the system of parks and vegetation, which should not be limited to fulfilling functions of offering protection, maintaining boundaries, or serving as ornamentation, but also

favour plants that are able to absorb pollution. In fact, the programme refers to its spatial qualities and the relationship it has to each of the aspects considered. What McHarg, Hough, and others have proposed is to incorporate the natural water system into the planning and design process, including all aspects of sustainable development. As it is not possible to include them at the end, the system must be considered at the very beginning of the decision-making process.

This process has led to the awareness that a single design action can achieve several goals by simultaneously fulfilling different criteria. For instance, the public space concept of parks and tree planting can help fulfil goals that have to do with water, noise, and health. 'Try It This Way' made the planning process easier by recommending tools such as Agenda 21. Agenda 21 was conceived based on four principles: participation, collaboration, results evaluation, and self-correction. The strategy of the plan was to diffuse knowledge and ideas which allow us to shape a collective conscience concerning what is being done. Furthermore, it encouraged us to reflect on the specific interactions between the different social and economic modes that support the urban system, forming an ecosystem: "The urban environment and spatial resources must be designed within an integrated scheme in order to fulfil the need to produce food and energy, moderate the climate, as well as to preserve hydraulic resources, plants, animals, the environment, and leisure".[243] The main goal is to guide the transformation of the urban environment's relationship with nature through adept planning within its spatial context.

In 2003, the European Council of Town Planners (ECTP) developed 'The New Charter of Athens: Vision for Cities in the 21st Century'.[244] This charter aimed to inspire urban planners to assume new goals derived from social, economic and territorial changes. With this process, the ECTP tried to demonstrate two points. Firstly, the relevance of spatial planning in sustainable design to intelligently manage spaces – a limited resource with different demands and tensions. Second, they placed emphasis on interdisciplinary work, involving different techniques at multiple scales over a long-term process, as well as advocating the town planner's role and capacity to consider a series of elements, and translate them into spatial terms.

The first part of the 'New Charter of Athens in the 21st Century' proposed a vision of the city based on the concept of connectivity. The connected city can preserve its richness, cultural diversity, and competitiveness through creativity and co-operation, and contribute to the well-being of its inhabitants by fostering the integration of artificial and natural elements.



"There will be a number of policies, measures, and interventions in which the planner will play a key role. They will include:

- The revival of urban design to protect and enhance streets, squares, footpaths, and other thoroughfares as key linkages in the urban framework.
- Rehabilitation of degraded or inhumanely-planned pieces of the urban fabric.
- Measures to facilitate personal contact and opportunities for leisure and recreation.
- Measures to ensure the individual and collective feeling of security, as it is a key element to guarantee urban well-being.
- Efforts to create memorable urban environments derived from unique place qualities, thus enhancing diversity and character.
- Maintenance and cultivation of a high level of aesthetic excellence in all parts of the urban network.
- Conservation through planning of all significant elements of natural and cultural heritage, and the protection and expansion of open space networks."

The second part of the Charter develops 10 concepts for a city to focus on: the city for everyone, the participatory city, the safe city, the healthy city, the productive city, the innovative city, the mobile and accessible city, the environmental city, the city of culture, and the city with continuity of character. Besides these prescriptive principles, the Charter established the elements of the task as a whole, including the sectoral or intersectoral management of cities, good governance, a regulatory framework, and an administration that participates and collaborates on urban issues. It encourages a new kind of attitude, which highlights the summary of the goals and main challenges affecting the city, and suggests the situation be tackled at a local level for global change. In contrast to the functionalist urban vision, where there are different zones for life and work connected through transport, the new Charter stresses on the needs and interests of people, as well as their interests in cities within a world that is rapidly changing.

However, language often loses meaning when opposing views use the same words. The sustainable urban model cannot then be defended with words alone. Only when inhabitable spaces are built due to the result of decisions that neglect ecological processes can the true meaning of the sustainability discourse be revealed. However, language also affects the meaning of urban models and how society understands them. Beyond good intentions, we must raise our capacity to evaluate results, measuring both achievements and failures.

## PORTLAND AND CURITIBA: MANAGING THE URBAN SPACE IN A SUSTAINABLE WAY

With the work of pioneers such as Ian McHarg, the United States saw a boost in a new generation of planning strategies that respected landscape values by controlling growth and transformation. A landmark moment was achieved by demonstrating the contradictions of suburban sprawl. It was when federal services such as the National Forest or the U.S Soil Conservation Service actively promoted growth management techniques to moderate urban growth and its negative impacts, that the quiet revolution of land use control began.[245] Despite the legal limitations binding urban control, regional planning in the United States was rooted in both the scientific and cultural development of environmental protection.

This quiet revolution began to change the mentality of public administrations and consolidated awareness of the environmental implications created by the prevailing development model. It fostered a resolute action to moderate urban growth as a vindication to the region.[246] Such was the case with states like Oregon and Hawaii which were interested in the conservation of their rich natural resources, or Vermont and Maine with their rural landscapes. However, when this revolution reached the cities, a more difficult arrangement was reached because of their growth patterns. In the 1970s, Governor McCall endorsed the creation of the 1,000 Friends of Oregon, a volunteer association actively committed to the defence of the environment with persistence, patience, and perseverance. In 1973, they achieved the proclamation of the pioneering Oregon State Wide Land Use Planning Law, similar to laws in European countries that attempt to set boundaries for urban growth, activate public transport and social housing strategies, coordinate and invigorate public services, and enable co-operative actions between government, private developers, and local entrepreneurs. Thanks to the Land Conservation and Development Commission, there is a common space that allows stakeholders, such as Portland's Mayor and Oregon's Governor, to work together and tackle problems. Today, Portland's metro encompasses three counties and 24 municipalities.[247]

Growth management proposes the use of techniques and objectives similar to those of sustainable urban development, including: managing the location and character of urban expansion, preserving natural resources and the qualities and characteristics of the environment, providing an adequate system of infrastructure and services; preserving or creating a desired community life, improving economic opportunities and social equity, and finally, guiding local development in its relationship with regional and national systems. These are a well-known set of tools used to reach a balance of economic growth, social equity, and environmental sustainability. The novelty lies in combining their use and adapting them to the circumstances of each situation.[248]

One of the focal points in sustainable urban development is the co-ordination of transportation and urban development. Peter Calthorpe foresaw this in his 1990 project for Laguna West, the idea of proximity with a singular strategy – Transit Oriented Development (TOD).[249] This was not an original idea, since large cities such as London or Paris have been linking their urban development model with public transport models for years. As we will discuss in a later example, smaller cities such as Curitiba have done the same as well. Transport is a key argument in the sustainable city debate, something that is made apparent if we think about the compact urban model and reducing energy costs. Calthorpe proposed the use of public transport, urban form, and centrality as the spine of an urban model for the future of Oregon's Regional Plan. According to Calthorpe, TOD is the guiding strategy that defines the urban structure, with a direct influence on the road network, the assignment of uses, and managing urban densities. The combination of activities and uses are linked to cultural conditions as much as to the existing urban fabric. The TOD proposed an urban system structured by public transport routes, especially buses, trams, and trains. The resulting regional model has been adapted to the landscape, protects heritage, and has encouraged an architecture integrated with its place. The challenge is to envision the territory's form in the long-term, in a context where public action and private initiative work together with progressive guidelines formulated by society.

In 1998, the Urban Land Institute published 'Smart Growth',[250] which documents the values of the quiet revolution that began in the 1970s. 'Smart Growth' attempted to effectively integrate economic and environmental interests by proposing a design for greater density and the concentration of public spaces, coupling it with diverse activities. During a time when the suburban model was considered socially disruptive, economically unsound, and unattractive, 'Smart Growth' was viewed as a solution. It proposed a compact urban form and dense concentration to avoid sprawl, which allowed for the protection of natural and rural spaces, while increasing economic viability. The edge city (or metapolis) diffuses the city phenomena (see Chapter 10) and reveals that in very different places of the world, the anti-ecological urban development model continues to persist. This is a reality that tests the capacity of urban planning to organise

human settlements in a coherent and sustainable fashion, hence the importance of the Smart Growth experience.

New York's Regional Plan presented an innovative model focused on dealing with issues under the motto of 'a region at risk'.[251] The main urban strategies of the plan were conceived to mitigate risks through implementing efficient public transport, restructuring of centrality and urban facilities, strictly preserving natural areas, as well as improving parks and the green corridor network. The Curitiba example is similarly remarkable.

In the 1992 Rio Summit, the city of Curitiba, in the state of Paraná, was declared the 'Ecological Capital' of Brazil. This city has been continuously implementing a series of actions guided by urban and environmental quality for the last 30 years. Although achieved through collective effort, the leadership of architect Jaime Lerner, mayor of the city since the 1970s and later governor of Paraná, had a decisive influence. In 1966, Curitiba's master plan adopted a new urban model for the city, the content of which is valid, even today. The collective transport system on the main axis, the strengthening of the city's image, the park system, the areas of economic activity, and the quality of residential areas make up important elements of the urban model, and are a result of the planning effort and the quality of its urban management. Their sustainability goals are rooted in the society, relate to the urban structure, and are incorporated into the city's environmental and economic systems.

Curitiba's Integrated Transport Network, which originated in the 1970s, remains a solid model to this day and provides a unique solution to public transport – quality service at a low operational cost. The bus network was redesigned according to the hierarchy of the traffic system and articulated buses were given exclusive circulation lanes to decrease travel time. Bus stops were conceived as small exchange nodes at regular intervals, known as the Tube Stations. They aligned with local feeder routes (or alimentadoras), circular routes, and inter-neighbourhood routes, with access to the network granted through a flat fee. What is exceptional is that the transport lines have guided the management of land uses, promoting a TOD strategy that has strengthened the alignment structure and concentrated greater activity and hybrid uses along the axes.

The creation of a complex park system was another success. Relying on green corridors along rivers and valleys, restricting population settlement in these areas, and favouring the fight against floods, Curitiba now has the greatest extension of green area per citizen in Brazil (around 50sqm). The parks serve multiple functions, including providing a metropolitan bicycle network, allowing smooth drainage, and the accumulation of water in artificial lakes. It is a balanced system, which has redefined the city's image and is enjoyed by its population.

Concerned with the pulse of economic activity, Curitiba established the Curitiba Industrial City to steer technological development through a modern network of telecommunications, which led to the creation of a 'Software Park'. Automotive industrial parks were situated in different areas of the metropolitan region, such as Sao José dos Pinhais Industrial Pole (AUDI Park) that was located close to the International Airport. The city's endeavour to improve urban quality and facilities were instrumental in creating jobs and attracting international investment.

Curatiba's success lay in the efforts, long-term vision, and leadership of local authorities that contributed creative ideas, and had the ability to connect and impress upon citizens the need to develop future projects. The simplicity of some brilliantly-conceived solutions is surprising. For example, the 'Waste that is not Waste' project (Lixo que nao é Lixo) encouraged families to recycle glass, metals, and plastics, and the 'Green Change' programme allowed for recyclable waste to be exchanged for food and school supplies. In fact, the level of recycling and repurposing of waste has been ingenuous – old buses have been used a second or third time as free transport to urban parks, offices and mobile schools; old electricity posts were reclaimed for park or public office structures, such as in the Free University of the Environment headquarters; industrial packaging has been recycled into panels for the construction of social housing; and the landmark 'Lighthouses of Knowledge' project has provided free education to all neighbourhoods.

While not perfect, Curitiba has become an international reference for its creativity and environmental sensitivity. Led by Jaime Lerner, Curitiba has instilled its citizens with self-esteem and strengthened their sense of belonging. It has also left an important legacy through initiatives such as the Free University of the Environment or the Institute for Research and Urban Planning of Curitiba.



Fundación Metrópoli



Urban development and natural ecosystems research in the Virgin's Marsh, Cartagena de Indias.

## ECO-COMMUNITIES AND KISHO KUROKAWA'S PHILOSOPHY OF SYMBIOSIS

The philosopher Edgar Morin boldly claimed: "ecology defines itself as the first new science, science between man and nature, able to place in relation several dimensions, isolated until that moment in different disciplinary fields". Overcoming the disconnect between humankind and nature is something that has barely started. The difficulty lies in the responsible use of the knowledge that ecology and other sciences can offer. We know that the relationship between nature and cities begins with humans and their capacity to establish a connection to ecology. Michael Hough[253] writes: "the problems facing urban and rural regions are rooted in the inner cities, and solutions must also be sought there". Apart from a planning problem, there also exists a design issue. Some authors have thus begun to speak about eco-urbanism with the understanding that we may find solutions derived from ecological principles.[254] This is nothing new as there were urban projects drafted under quasi-ecological principles in the 1960s.

In 1969, Ralph Erskine designed Byker, a neighbourhood with 2,300 dwellings on a 32-hectare site in a semi-consolidated urban edge in Newcastle. Built between 1970 and 1983, Byker is renowned among architects, not only for its architectural design, but also for its organisation of pedestrian spaces, the integration of pre-existing spaces, the refurbishment of a semi-derelict space, and for the participation of its inhabitants. Many of this initiative's ideas are still exemplary. A similar example can be seen with the Sea Ranch in California, where the same logic was used by Lawrence Halprin to devise a protection plan for the coastal areas in 1965. The plan set a precedent for the development of condominiums that, as designed by Charles Moore, conform to and respect natural conditions.

Since the late 1950s, some of the projects by Jørn Oberg Utzon, Denys Lasdun, Josep Antoni Coderch, Luis Barragán, James Stirling, Max Bill, Tadao Ando, Herman Hertzberger, and Giancarlo De Carlo, have exhibited an interesting vein of good architecture, rooted with simplicity in their environment, humbly and deeply connected with nature. Since then, ecological considerations have started to guide small neighbourhoods in Northern Europe. For example, in 1977, 72 dwellings designed by Abe Bonnema in the outskirts of Utrecht applied the concept of shared streets (later called woonerfs) for the first time, and the architecture was organised in an organic manner that avoided having straight rows of houses. Lucien Kroll, a European architect identified with

ecological urban projects, is well known for his pilot project for the Dutch government. The project Ecolonia comprised a group of 300 single-family row-houses surrounded by water bodies, typical of the Dutch landscape, and with very precise designs of small, semi-public spaces.[255]

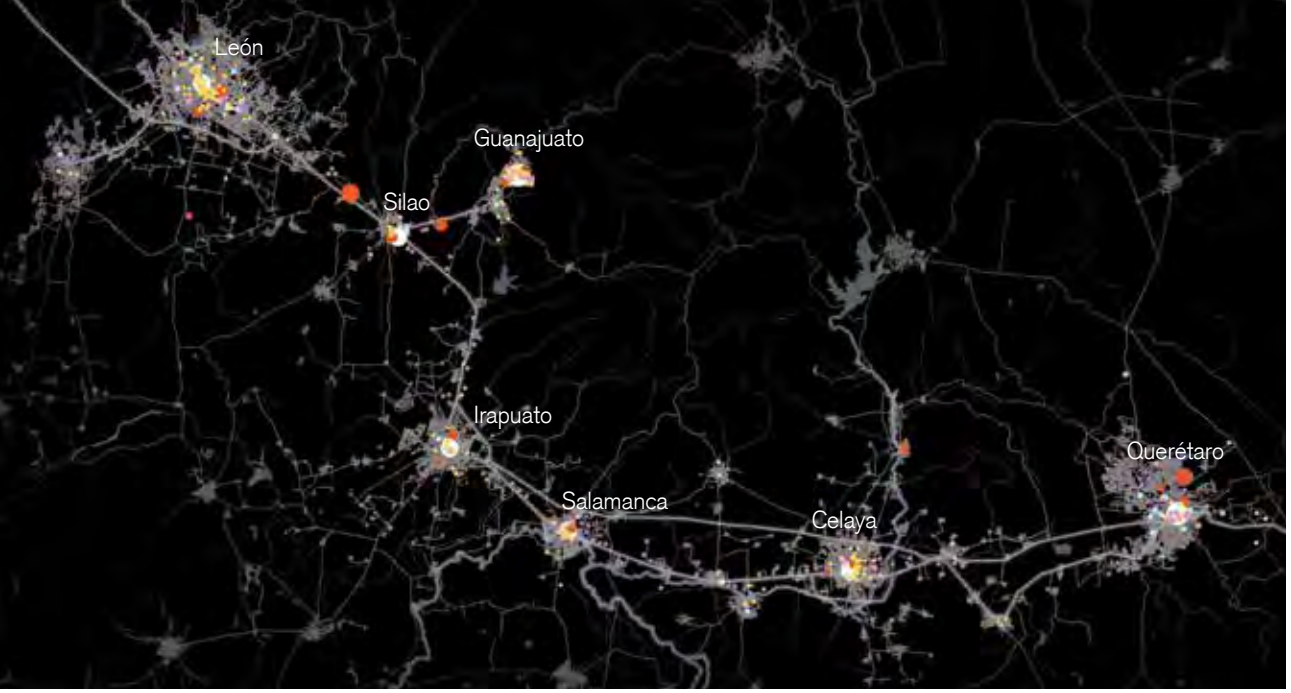
Urban regeneration is one of the first fields to embrace the principles of sustainable urbanism. 'The Leipzig Charter on Sustainable European Cities' (EU, 2007) has prioritised the improvement of the existing city, especially in deprived areas, through integrated urban design. It is a design that is planned and interdisciplinary, which reassesses public space with social goals in mind. The tools and processes used in urban restoration have led to an emphasis on the concept of urban regeneration. Reduce, reuse, recycle, and restore are words that already contain decisive principles for urban ecology, for it is in our cities that the need for improvement through projects based on knowledge and environmental sensitivity is greatest.

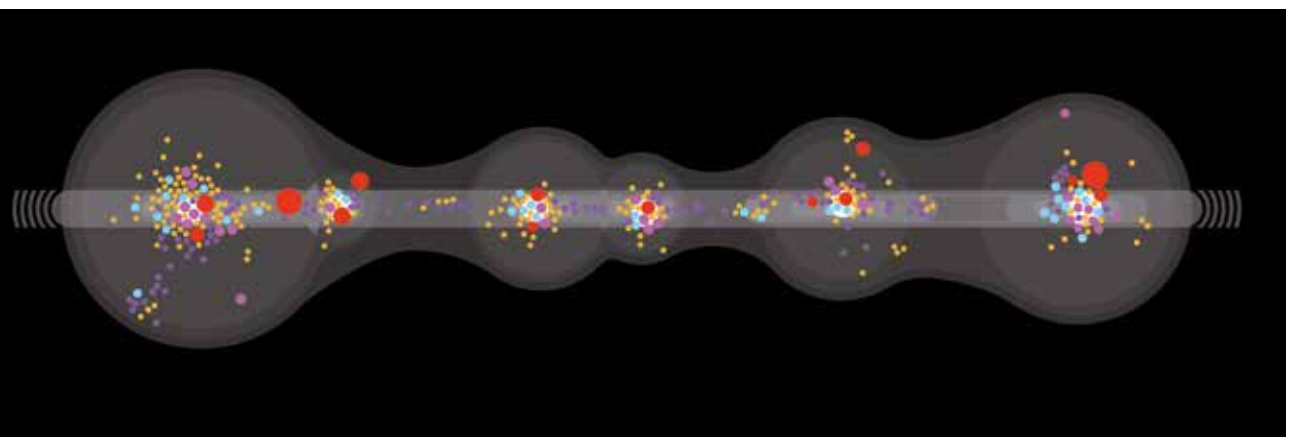
Some recent cases of 'Eco-Neighbourhoods' have been widely published. This concept is linked to sustainable urban development in urban expansion or in new districts such as Solar City in Linz (Austria), Dongtan in Shanghai, Masdar in Abu Dhabi or Sarriguren in Pamplona. It is also found in neighbourhoods that have undergone urban regeneration strategies such as Vauban in Freiburg, HafenCity in Hamburg, the Greenwich Millennium Village in London, or Hammarby in Stockholm.

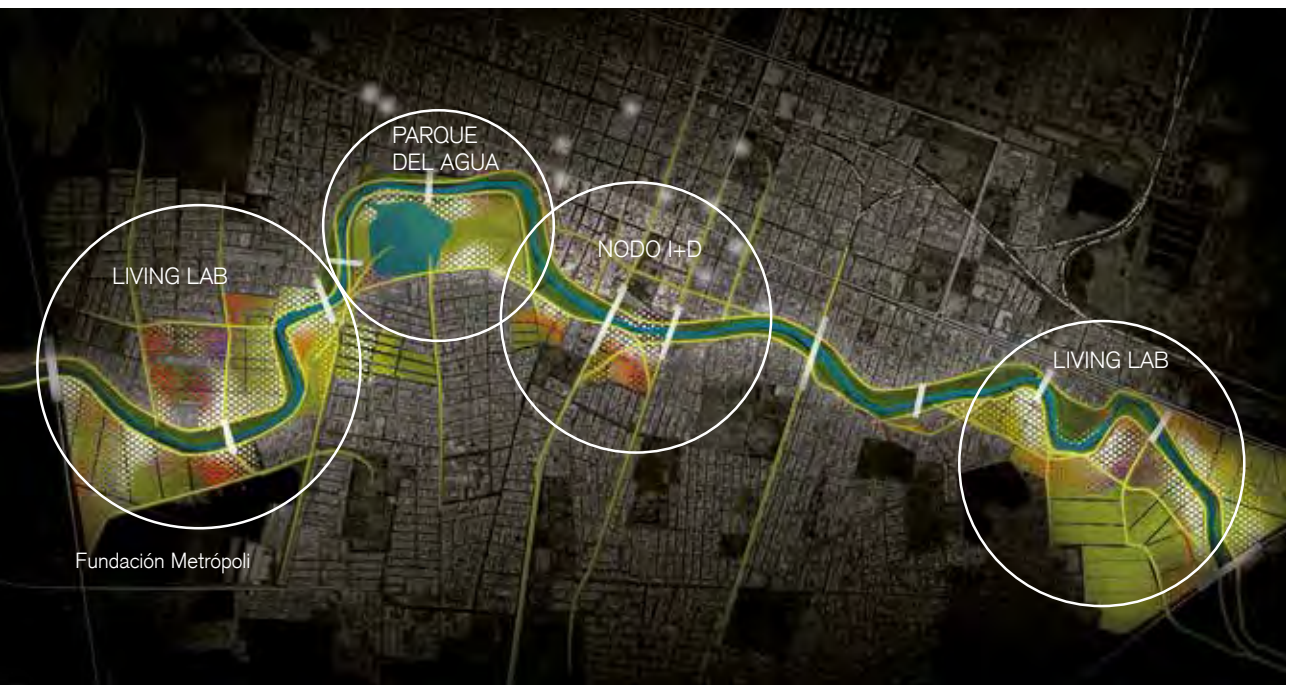
Sarriguren, located in Pamplona, is the result of an initiative created by the Navarra government, whose master plan was drafted by Fundación Metrópoli after winning a public competition in 1998. The project focused on the creation of a well-equipped social housing neighbourhood, where 5,000 houses over 150 hectares were designed according to bio-climatic principles. Integrated with its environment, it includes a corporate park capable of generating jobs linked to the green economy. Fundación Metrópoli's philosophy was to understand sustainable design as the integration of physical, social, and environmental dimensions called 'innovation ecosystems', which considered the future of 21st century cities. The components of excellence in this urban area have been analysed and designed according to local conditions. It was based on a green structure that respected topography and waterways; included existing buildings, created new, high-quality urban spaces with bioclimatic architecture; and fitted it with efficient and integrated urban services. Sarriguren's central park project, fitted with 'innovation cubes', represents the will of a well-connected urban space with an attractive articulation of urban functions. Sarriguren is well-established and extremely valued by its inhabitants.

In 2003, Stockholm approved the Hammarby Master Plan, which covered a degraded industrial-port area where the Olympic Village was to be located based on the city's application for the 2004 Olympic Games. However, the transformation of this brownfield zone did not stop there, with the new neighbourhood emerging from what already existed, thanks to a complex project process programmed from 1997 to 2017 that established new infrastructure and mediated changes. Today, Hammarby Sjöstad, 'Port City', is a neighbourhood built and inhabited – although some phases of the project have yet to be completed. The final estimate is 11,000 dwellings, 26,000 inhabitants, and 10,000 jobs in a 171-hectare area around a 33-hectare body of water. It was a successful and widely published example, where the main achievement included long-term and collaborative management. The larger part of the land was owned by the city, which was then leased to developers to fulfil strict design guidelines in its development. The goal was to become a 'SymbioCity', a place capable of having a closed cycle of energy, materials, and waste[256] through a variety of means, including comprehensive public transportation that will decrease daily car commutes by 40%, local management of the energy cycle (via district heating, clean production, and decrease in consumption), integrating management of urban waste (pneumatic and selective collection of waste or biogas production for domestic use and public transport), and gaining complete control over the water cycle. There is an attempt to replicate the project at Stockholm's Royal Seaport and it has already inspired neighbourhood transformations in other Baltic cities, such as Västra Hamnen in Malmö and Kalasatama in Helsinki.

In the Japanese context, Kisho Kurokawa contributed an interesting practical experience and theoretical reflection in his book 'The Philosophy of Symbiosis' where he drew upon the confluence between Eastern and Western cultures to integrate nature and artefacts, while keeping his metabolist past in mind.[257] The multivalency of contemporary culture allows for a nonconformist stance where ideals of Western progress can learn from the East: "the philosophy of symbiosis is dynamic, free, and bright, it is the philosophy of the nomads of a new era." Japanese culture offers concepts such as the wabi (a silent eloquence) and the hanasuki (an aesthetic vision close to the Greek aleteia or truth by demonstration) to the design processes. In the characteristic order and chaos of cosmopolitan cities such as Tokyo, urban spaces should be understood as a novelistic narration.






León-Queretaro Axis and Salamanca Rio project. Sustainability must contemplate different territorial dimensions, as well as its economic, social, and environmental aspects.

The dynamic mix of forms and ambiguity has to be prioritised in the urban space. These are subjects that inspired the work of Kurokawa and was crystallised in the completion of Shonan Life Town in 1967. It was then repeated in mega-urban projects, such as the Shenzhen Central Axis Plan in 1997, which was conceived to organise the Chinese megacity located beside Hong Kong as a great, green axis and on a scale Kurokawa compared to Central Park or the Tuileries-Champs Élysées axis.

For these projects, Kurokawa was inspired by Japanese Edo culture, especially the symbiosis of forms found in kabuki theatre. This popular form of theatre is well-known for the stylisation of its abstract fantastical genre and elaborate make-up worn by its performers. Kabuki combines technology and humanity as exemplified in sukiya, a hybrid architectural style that appears in stage productions. It employs a method in which historical forms are followed, but it is open to the inclusion of new techniques and materials to produce gradual change. As in the concept coined by Kurokawa, Rikiu Gray, symbiosis exists in a state of flux and operates between darkness and light. Hence, the argument is that there are different possible explanations and interpretations for our relationship with nature. It cannot be defined and dominated solely by one culture, whether by Buddhist precepts or Western rationale. The human relationship with nature ought to coexist together, capable of imagination, open to the joy of discovery, and able to combine the sacred and the profane. It is not only peace; in symbiosis there is competition and opposition, but also the search for consensus. It is a philosophy that Kurokawa encouraged in his surroundings and is recognised in some of his most interesting urban and architectural projects in Asia such as the Multimedia Super Corridor and his design for the Kuala Lumpur International Airport, both located in Malaysia.

Within the contributions and experiences drawn from the design of the ecological city, the discourse gravitates to issues such as density and compactness. For its advocates, the compact city is a socially sustainable urban model because it prioritises interior growth, favours accessibility, maintains services and facilities, increases urban vitality and social relations, and supports the development of economies at local scales. Richard Rogers makes an interesting contribution in his booklet ‘Cities for a Small Planet’ with easy to share principles defining the sustainable city:[258]

1. An equitable city, where justice, food, shelter, education, health, and opportunities are distributed properly, and where all people feel represented by their government.

2. A beautiful city, where art, architecture, and landscape foster imagination and renew the spirit.
3. An ecological city that minimises its environmental impact, where the relationship between built-up space and landscape is balanced, and where infrastructure uses resources efficiently and securely.
4. A city that favours contact, where public space promotes community life and the mobility of inhabitants, and where information is personally and informally exchanged.
5. A dense and polycentric city, protecting the surrounding countryside, integrating communities, and optimising their proximity.
6. A diverse city, in which the degree of diversity of overlapping activities encourages, inspires, and promotes a vital and dynamic human community.

Based on the collective experience spanning decades in the theoretical and practical field of urban development, conceived with ecological principles, we can conclude that urban design must review its goals and considerations. Its main goal must be the creation of quality spaces where natural processes are the basic source of inspiration and criteria for decision-making. However, we must be mindful that in many societies, their built urban structures and traditional typologies, their shapes and materials, and their relationship with climate and topography, can be drawn upon to define an urban planning and ecological architecture manifesto.



## NEW URBANISM AND LANDSCAPE URBANISM; SUSTAINABLE CITY LANDSCAPES

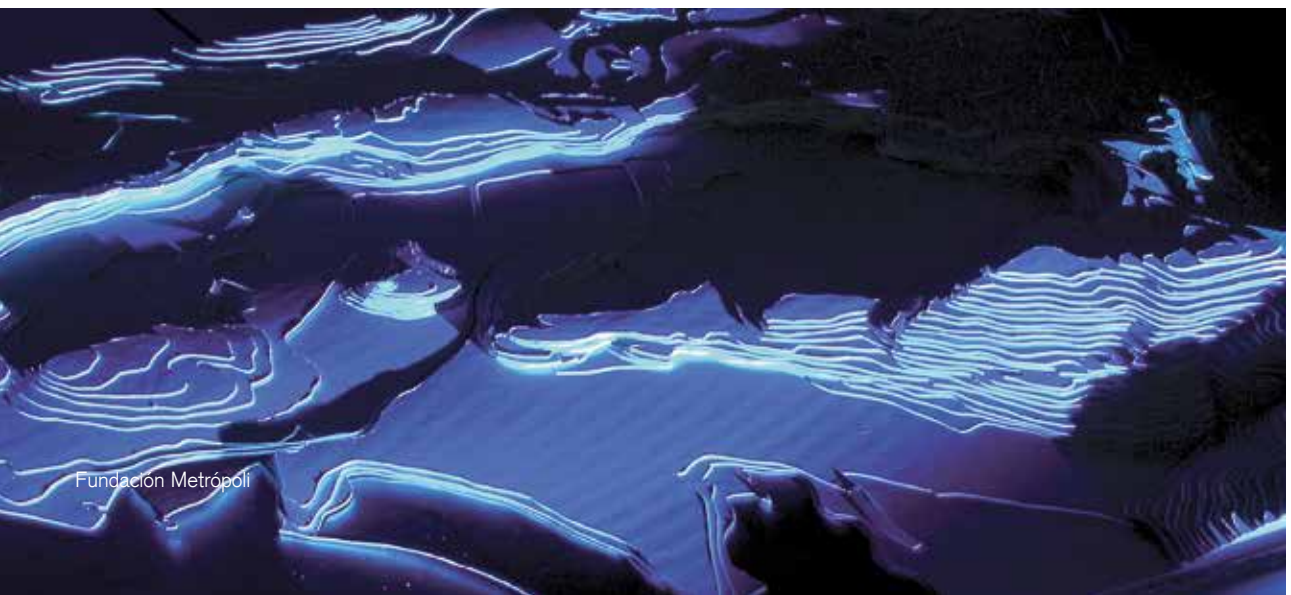
In North America, a new traditional urbanism movement, fusing old and new ideas, emerged from the struggle against sprawl and the recovery of urban design. 'New Urbanism' combined themes found in the American landscape and 'Civic Art', representing an ecological reaction to the middle-class suburban utopia.

Perhaps the first signs of the movement happened with the publication of the 'Pedestrian Pocket Book' in 1989, a booklet pointing to urban design from the then theoretical pedestrian revolution.[259] The creation of new communities was proposed both as heritage and principle, turning the project into an essential tool in the struggle against the suburban model. Peter Calthorpe contributed to the text, and together with Andrés Duany and Elizabeth Plater-Zyberk, they were at the core of the New Urbanism movement. In 1993, New Urbanism consolidated as a tangible movement when it promoted a charter of urban principles that criticised urban sprawl and pioneered advocacy for sustainable design.[260] The movement's work is related to that of European architects such as Léon Krier, who joined the group in search of inspiration from traditional urbanism. Krier built picturesque architecture in the vernacular, reflecting values of small European villas. In Poundbury, Krier exchanged ideas, developed a strong partnership, and drafted a master plan with Andres Duany, the 'evangelist' of New Urbanism.[261]

In 1981, Duany drafted the Seaside urban plan with Plater-Zyberk, and in 1989 he drafted the plan for New Town Windsor, both in Florida. Both plans developed a formal code for future dwellings by a figurative ordinance that had already manifested. A small urban renaissance developed with the construction of Seaside.[262] Behind the dunes, a new community by the sea with neo-baroque arrangements, defined by its grove boulevards emanating from a central garden plaza, is at the heart of this 32-hectare development for no more than 2,000 inhabitants. The interest in enjoying the sea while preserving the dunes and encouraging a sense of community, through the organisation of uses and public spaces, displays very specific urban design solutions. Moreover, the definition of formal patterns for buildings that aimed to control and provide continuity for public spaces, deeply linked to the works of John Nolen in Florida in the 1920s,[263] introduced a normative logic abandoned by contemporary American urbanism. These new urban communities, voluntarily self-regulating and located in a rural or semi-natural environment, achieved a certain local identity and a precise







Fundación Metrópoli

Landscape urbanism. Research on the restoration of an old quarry and its transformation into a technological park in Cantabria, Spain.

design of public spaces. In 1998, the filmmaker Peter Weir used Seaside as a location for his film The Truman Show, in which Jim Carrey's character lives in an unremarkable, middle-class, suburban reality simulated by media corporations, in which he eventually discovers the reality of his life and the place he lives in.

The principles of New Urbanism are from an amalgamation of different sources: a preference for a classical layout, definition of urban design patterns, analogy of a garden city coexisting with growth-controlled planning, the incorporation of landscape ideals, an adaptation to its environment, and an intensification of mixed uses. Peter Calthorpe introduced the metropolitan dimension to the movement and integrated it with the sustainability goals of growth management.

New Urbanism shares many of the concerns of the sustainable city project, such as regional understanding, nature preservation, public transport prioritisation, community ideals, and urban growth management, although its products are hard to distinguish from other new neighbourhoods, especially in Europe. However, as seen from this perspective, it offers an opportunity to learn from useful and creative urban scenarios that have occurred in North America. Two present issues of New Urbanism have a central role in the search for quality in cities: urban design concerned with public spaces and a certain reinvention of landscape architecture.

Prominent urban analysts, not only architects, but also geographers, sociologists, and environmentalists, currently emphasise the importance of proper urban design while rediscovering landscape architecture as a discipline. It is not only about designing parks and gardens; it is also about disseminating a new sensibility towards nature in the urban landscape as a physical, environmental, economic, and social transformative element for a city. As demonstrated by some unique works of landscape art, the interaction between artefact and nature has become increasingly important, and the creative intervention between a city and its landscape is now increasingly evident. We might find valuable and unusual precedents such as The Comb of the Wind in San Sebastián, Spain, where Eduardo Chillida's genius is complemented by Peña Ganchegui's intelligent architecture to create an almost magical place, where city and seafront promenade meld with wild nature on the cliffs battered by the sea. However, the task ahead is monumental since the influence of the landscape is still restricted to its immediate architectural surroundings or at most, the city scale, and not to the whole inhabited region.[264]

It is not only a matter of park design, but also of incorporating nature in the city as part of a system that allows us to establish an integrated relationship between local geography and urban transformation. Frederick Law Olmsted and Calvert Vaux demonstrated this when they introduced the park system between 1868 and 1878 in their projects for Buffalo. After the success of New York's Central Park, their 'system' acquired a life of its own in Boston's Emerald Necklace, where the principle 'nature makes the city beautiful', as advocated by Olmsted, provided wide open spaces for leisure and created an irreplaceable public structure.[265] Olmsted's works capture the essence of civic art and urban design. A knowledge of natural processes and an interest in improving the city merge to form an exceptional urban landscape. A 'dialectic landscape', as defined by Robert Smithson,[266] is a landscape understood by its dynamism and has adapted to the city's character. This set a precedent of what urban ecology seeks today – the park system shapes and structures the city.

From a perspective once initiated by Olmsted, the Landscape Urbanism movement has gained momentum up till present day. This movement advocates urban project strategies based on landscaping tools. James Corner, professor and practising landscape architect (also one of the people responsible for New York's High Line project), has brilliantly advocated for the urgency and strategic importance of landscape issues in the city.[267] American landscape culture, along with other similar cultures from the Netherlands, Scandinavia, Australia, and others, have revived classic goals of urban design that are more focused on natural and cultural landscapes, as well as reconsidered projects for important parts of the city. Professor Charles Waldheim redefined the concept of Landscape Urbanism by proposing that the landscape acquires relevance in the city when examined across a range of disciplines: "landscape has become a lens through which the contemporary city is represented and a medium through which it is constructed".[268] This has led to the rediscovery of nature and natural procedures in traditional urban design, which has been mired in the excessive resource extraction and consumption of the unsustainable city.

In this context, integrating art and nature becomes increasingly relevant. Few examples are as exceptional as the Comb of the Wind or Peter Eisenman's moving Memorial to the Murdered Jews of Europe in Berlin, however there are plenty of efforts to integrate art, especially sculptures, in public spaces, such as Jaume Plensa's fountains at Chicago's Millennium Park.[269] The key issue is Landscape Urbanism's capacity to renew and transform the city, particularly its ability to catalyse the transformation of public spaces. We have seen this in New York's High Line, where the most interesting observation is not of the linear park itself, but its contribution to the dynamic regeneration of a part of New York City. Here, the private sector, together with the city's planning team, promoted a major transformation of the infrastructure's surroundings by converting it into an elevated linear park.

New Urbanism and Landscape Urbanism are parallel movements that were beyond cultural sensitivities and preferences[270] and have led to the revival of 'Civic Art'. Together, they share in the defence of quality urban design, where history and nature co-exist as a source of meaning and inspiration. Over the last two decades, architects and landscape architects have collaborated intensively on a variety of urban projects: parks, promenades, and public spaces of all kinds, including brownfields, urban edges, and waterfronts. Landscape as a project is meant to encompass the city as a whole, from the historic urban space to the urbanised countryside.

## EUROPEAN GREEN CAPITALS: VITORIA AND COPENHAGEN

In 2010, Stockholm was selected as the first European Green Capital, an award promoted by 15 cities in 2006 on behalf of the then president of Estonia's parliament and former Mayor of Tallinn, Jüri Ratas. Since then, EU Commissioners for the Environment have been calling for entries in a competition that represents the best efforts in promoting sustainable urbanism. After Stockholm, Hamburg, Vitoria, Nantes, and Copenhagen were selected, Bristol was chosen in 2015 and Ljubljana in 2016.[271] The European Green Capital award does not only acknowledge the level of excellence in the improvement of the urban environment or the decrease in $CO_2$ emissions, it also factors in the efficiency of a city's integrated urban planning. This encourages cities to keep improving and become a reference point for others encountering global challenges. More sustainable cities can be developed, which provide the people who live and work in them with the highest attainable quality of life. Considering the air we breathe, the water we drink, and the noise affecting us, we must promote healthy cities where inhabitants are conscious of the need to improve the sustainability of urban life in key areas such as water, energy, mobility, and the efficient use of land. Europe is one of the areas in the world with a greater awareness of sustainable development. This prize promotes concepts such as eco-innovation and green technologies applied to urban issues.

In 2012, Vitoria was selected as the European Green Capital, validating the city's efforts to promote more sustainable urbanism. To a certain extent, Vitoria represents the success of urban planning. Since its origins as a medieval burg, Vitoria expanded in the 13th Century following the introduction of the French Bastide model. Other similar excellent examples include Los Arquillos and the Plaza Nueva during the Enlightenment, where Vitoria's urban fabric eloquently unveiled the different ages of the city. During a time of growth and expansion, driven by rapid industrial change, Vitoria grew from just over 70,000 inhabitants in 1960 to almost 140,000 in 1970. The city intelligently modelled its urban development, and even up to this day, Vitoria is a city with a culture of good urban management. Towards the end of the 1980s, under the leadership of a prudent and dependable mayor, José Ángel Cuerda, the city promoted an intense regeneration of its historic centre. It was the starting point for the endorsement of quality urban planning, which would be increasingly concerned with environment and cultural landscapes.

Vitoria's distinctiveness has contributed to its success. The city, located in the valuable rural area of the Alava plateau, is surrounded by small rural villages belonging to the same municipality. This contributes to improved interaction between the city and the countryside, and a rare rural control and influence over the urban area. In 2015, the municipality had a total of 242,000 inhabitants, with a sophisticated urban area that included important industrial spaces and an airport crucial to logistic operations.

The first step in Vitoria's transformation into a green city came from the need to control the Zadorra River, which borders the city. Against the basin authority's proposal to channel the river, the city council instead developed a landscape integration project with the river to control the flooding that occurred at the city gates. A derelict airfield and its surrounding spaces were converted into the Salburua Park, now an environmental symbol for the city and a wetland with great ecological value. The typical urban expansion of Spanish cities since the end of the last century was minimised in Vitoria through two key instruments: the creation of a system of parks with regulating functions and the quality of urban design of new neighbourhoods. The park system is structured by the streams crossing the city northwards to the Zadorra River. Together with a virtual line unifying border towns in the urban fabric, a green ring was created to surround the compact city, comprised of a corridor and park system that penetrated the city. This system has provided the integration of new neighbourhoods with landscapes that follow environmental guidelines. Despite the shadows cast by the recent Spanish real estate crisis, the transformation of rural villages and design efforts for the new residential neighbourhoods, such as Lakua, Salburua and Zabalgana, are exemplary and relevant to the discourse on sustainable urban development.

Vitoria's city council includes a very professional and established environmental department, which not only conceived the green ring, but also defends ecological perspectives of urban transformation and promotes key actions in areas such as renewable energies and waste management. Its transport strategy to decrease $CO_2$ emissions is particularly relevant. Together with the Basque Government, the city catalysed an important transformation of its public spaces by introducing the tram to its central area. At the same time, the city developed a new project for sustainable mobility by encouraging the reduction of private transport, favouring the use of bicycles and pedestrianisation, and reinterpreting the different urban areas based on their relationships and distances. In this regard, Vitoria has achieved an important reassessment of its public spaces and intensive work in urban infrastructure, not only of its parks and gardens, but also of its streets, squares, and pedestrian networks. A promenade around Vitoria takes us closer to the sustainability principles recognised by the European Green Capital award.

Copenhagen, Europe's Green Capital in 2014, has a completely different urban reality. It is a port city and the capital of a kingdom with important restored fortresses, much larger than Vitoria. A total of 570,000 city inhabitants and almost two million in the metropolitan area, have provided Copenhagen with an important urban culture. Its port and strategic location at the Oresund strait, overlooking a series of islands at the gate of the Baltic Sea, have given it a truly unique character. The Copenhagen Finger Plan developed by Steen Rasmussen and Peter Brad Bredsdorff in 1947, so named because of an image of an open palm depicted in the document, has been integrated into the DNA of contemporary urbanism. It was a ground-breaking plan linking urban development and transportation, particularly rail transport. It had clear intentions to limit the diffusion of urbanisation and to guide the city's expansion in alignment with the public transport system.

Copenhagen is considered one of the cities with the highest quality of life in the world and also one of the most advanced in the promotion of the green economy. The city also pioneered the implementation of urban sustainability improvement initiatives. The Danish social model and the country's prosperity have enabled global leadership in this field. In 1993, the Danish government established an Urban Committee, which focused on the improvement of

quality of life by providing housing for marginalised social groups, particularly migrants. In 1996, the Kvarterløft, a pioneering urban regeneration programme, was launched for problematic neighbourhoods and was supported by the engagement of reliable local agents. The attention given to neighbourhoods, the search for sustainable transport systems and renewable energies, the growing use of bicycles, improvements to public spaces, and its commitment to innovation and the green economy, is what best defines the urban model embraced by the city of Copenhagen.

Another aspect highlighted about Copenhagen was its close relationship with the nearby Swedish city of Malmö. It is a city with great connectivity, strategic infrastructure and facilities such as an airport, port, and universities. The two cities provide an integrated space to live, work, play, and learn. Beyond the relationship between these two cities is a tangible sharing of clear principles that are in the search for excellence in sustainability. The Oresund urban region, which lies on both sides of the strait and is spread across two countries encompassing 3.6 million inhabitants, has a growing immigration in-flow.

In Copenhagen, new neighbourhoods are being built in tandem with the regeneration of obsolete urban spaces, especially port areas such as Nordhavnen, contributing towards the creation of a dynamic, vibrant, and eco-friendly city. Guidelines have been established to promote renewable energy, reuse resources, develop means of environmentally-respectful transportation, and introduce sustainable construction and adaptation to nature's diversity. In a city that prides itself as the 'Venice of the North', the development of residential spaces and activities on waterfronts has been prioritised. Another relevant example is the regeneration of the Carlsberg district in 2007. It developed an improvement strategy for sustainability and social inclusion by tracking 14 indicators for each district of the city: employment, transportation, energy, water, material life-cycle, green and blue areas, social diversity, urban landscape, urban life, identity, business and services, economic activity, the impact of strategic initiatives, and duration of the projects.

The Copenhagen Vision, linking the city to the Green Capital programme, has planned the city's future on four main action plans: becoming a carbon-neutral capital by 2025, being the best city in the world for cyclists, transitioning into a 'green and blue' city, and becoming a healthy and clean city. It is important to verify the evolution of language in the past few years. This could inspire other cities attempting to achieve not only urban sustainability but also liveability, and expand sustainability towards an integrated vision of the 'healthy city'.[272]

To accomplish this, citizens must engage in the active search of shared goals for the city – what is now known as 'Copenhagenisation'. This is "a design strategy aimed at improving the quality of sustainable urban life by re-orienting city design towards the pedestrian and the cyclist, and to be less dependent on the cars." Copenhagen wishes to become an example for world cities to incorporate eco-urbanism and, within that context, become the leader on green economy development, capable of generating quality employment for citizens and wealth for the nation.

# 09 DIGITAL CITY, SMART CITY

Until recently, the home, the factory, the office, and the university had clearly defined boundaries. Today, the digital revolution is transforming spaces, flows, and nodes within the territory. This encourages more flexible, connected, and interactive social structures. The emergence of networking, innovative environments, and the reconfiguration of production, services, and consumption models, have enabled us to understand the impact of new technologies in the future city.

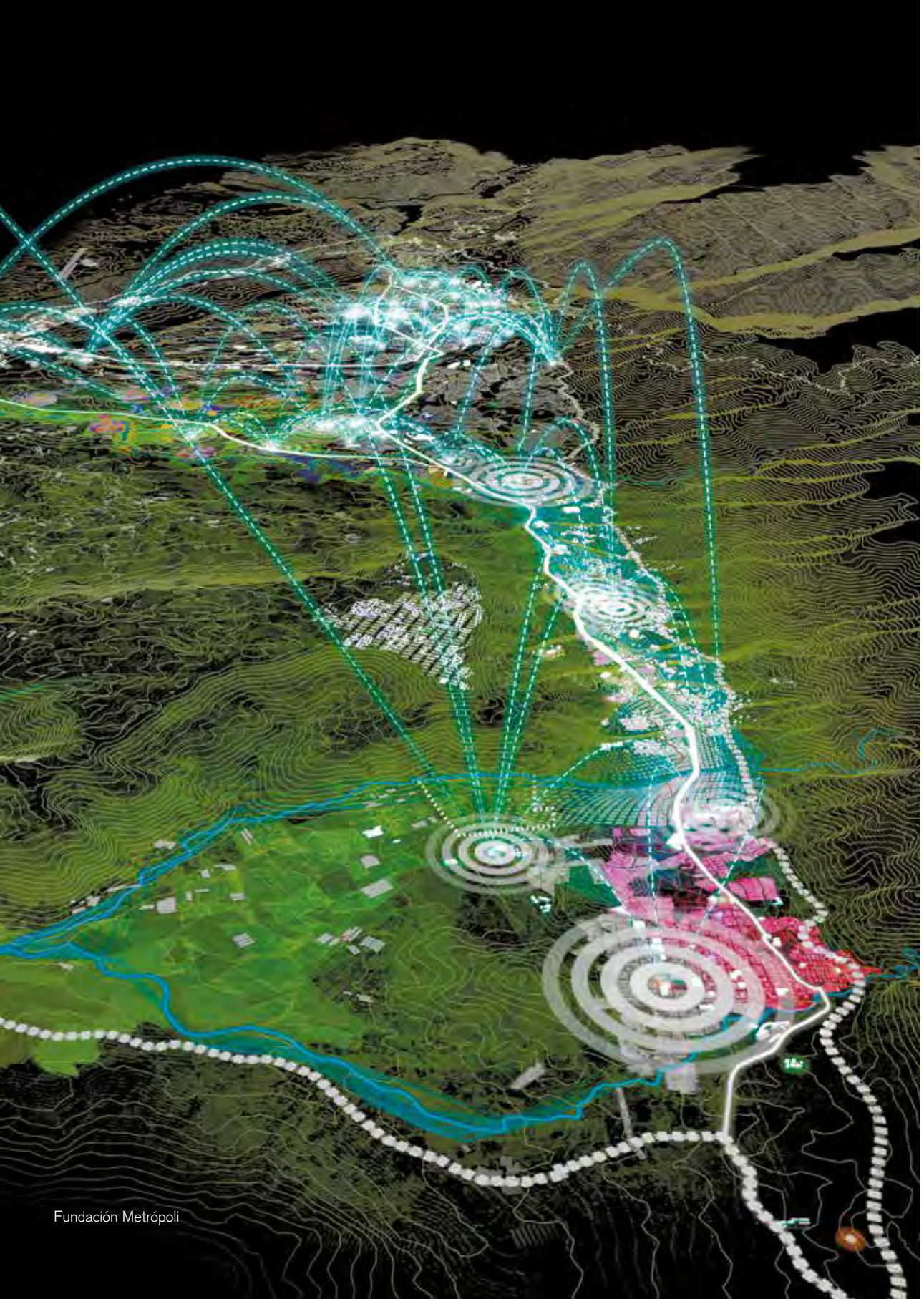
Certain places such as Silicon Valley, Boston's Route 128, Philadelphia's 202 Biotech corridor, Japan's Science Cities, Cambridge's technology parks, and Bangalore in India have all been privileged spaces for innovation and technological development. In these places, one can perceive how the basic inputs for the new economy are from the talent and creativity of the people.

Beyond the mere technological aspect, the Smart Cities movement can contribute towards achieving the goal of a sustainable, competitive, and socially balanced city in search for intelligent territories.

The digital revolution allows us to reuse inherited urban architecture and structures with great flexibility. Will the historic centres and other renovated spaces become the digital districts and innovation nodes of the future? Some current examples are Dublin, Yokohama, Barcelona, and Guadalajara (Mexico).

In the quest for an intelligent dialogue between digital technology and urbanism, we present Singapore's One North project, a fusion space attracting international talent and encouraging innovation, equipped with powerful digital infrastructure.

- # THE KNOWLEDGE SOCIETY
- # INNOVATION AND TERRITORY
- # SILICON VALLEY: TERRITORIES OF THE NEW ECONOMY
- # THE CITY AFTER THE DIGITAL REVOLUTION
- # THE SMART CITY MOVEMENT
- # DIGITAL DISTRICTS IN THE CITY CENTRE: YOKOHAMA, DUBLIN, BARCELONA AND GUADALAJARA
- # ONE NORTH, SINGAPORE
- # THE LIMITS OF THE TECHNOLOGICAL UTOPIA: MASDAR



Fundación Metrópoli

## THE KNOWLEDGE SOCIETY

In the 1970s, the sociologist Daniel Bell introduced the concept of the post-industrial society.[273] In his important visionary work, he attempted to define the change in the structure of North American industrial society. The post-industrial society is identified by the importance of the services sector in the economy; where productive growth relies on technology that permits working in complex environments, as well as the emergence of new activities and service sector professionals, which make up the economy's largest employment group. The shift from a manufacturing-based society to an information and knowledge-based society is distinguished by the size of the services sector in the economy. According to Bell, this change from a manufacturing economy is only possible due to the prominence of knowledge and technology. Today, scientific research and the development of new technologies are a clear indicator of the relevance of knowledge in society. Bell analysed the investment in research and development, concluding that the change would not just be economic, but also social. The post-industrial society is "a creative, unplanned change in the character of society," working out of the logic of socio-economic organisation, and a "change in the character of knowledge." Bell, introducing the concept of the 'knowledge society', even claimed that society itself could become a "network of consciousness"[274] by emphasising the intangibility of the intelligence of a society, of its collective knowledge, and its applicability.[275]

When we mention the knowledge society, we refer to a process happening in stages, manifested today in outstanding local development associated with a great social vitality and the rise of new elites, or in the emerging social insurgence, thus compromising the field of values.

Effectively, the digital revolution involves our capacity for knowledge, to have certain information available and act on it accordingly, although it does not always enable a deeper understanding of reality in all its complexities. We are immersed in change processes and what we can explain or envision is limited, beyond portraying enthusiasm or highlighting risks. The change in social relationships in a context dominated by mass media had been anticipated by Marshall McLuhan, the first author to identify the electronic form of the information revolution – the dawn of the digital revolution. In 'Gutenberg Galaxy: The Making of Typographic Man', he points out how "the new electronic interdependence recreates the world in the image of a global village".[276]

The Santander Life Project. A valley designed to anchor growth for innovation and business development, allowing the integration of physical space and the digital world.

This has happened before. In his well-known literary work, '*Notre Dame de Paris*' (The Hunchback Of Nôtre Dâme), Victor Hugo makes one of his most heinous characters, Frollo, the archdeacon of Nôtre Dâme, say before one of the then rare and recently printed books, while pointing to the Paris Cathedral: "this will destroy that, the book will destroy the edifice".[277] In this manner, the author expresses the amazement and intelligence of Nôtre Dâme's custodian, who perceives how the printed word would kill a culture that had in the Cathedral its main means of communication. Until Gutenberg, architecture was the dominant communication tool. Prominent thinkers such as Karl Marx were impressed by this passage.

The new knowledge society has been formed by information, or access to information, rather than knowledge. The extraordinary technological and computational advances that have allowed us to use the Internet, have also given us access to a huge virtual warehouse – cloud services are provided from huge data centres by companies strategically located in different parts of the world, such as Microsoft, Google, and Amazon. However, the possibilities of taking advantage of 'big data' – the massive and ever-increasing collection of information – with suitable search engines constitute a true challenge. Some believe that the future increase in productivity and scientific advancement will depend on big data, as is already happening in some fields such as genomics or quantum mechanics.

Technology has provided replacements for the individual and collective imaginations, through the possibility of virtually infinite data and memory, and the provision of alternative configurations in an increasingly broad communication context. With the intelligent use of cloud information and services, governments, citizens, and corporations could be better informed and be able to make appropriate real-time decisions. Everything is now accelerated, even the awareness of inequality, since innovation factors highlight differences when they are not accessible by everyone. Some places are privileged by their size and cultural tradition, for instance, four or five urban areas around the world that have more Nobel prize winners than the rest on this planet. The best minds of our times in science and technology are devoted to creating that artificial or cyber world, either of mineral or biological nature, and using the creation of intelligent tools to feed our illusion of progress. Although it is a knowledge society, there are doubts as to whether it is a wiser society. The network favours commercial logic and a permanent promise of comfort, efficiency, security, fun, improvement, and so on. At the same time, the Internet has also become a remarkable medium to organise and exchange ideas, enabling unlimited collaboration.



There is clear evidence that technology today is transforming societies and economies. Jobs in digital technologies are already replacing traditional activities, becoming economic engines and the basis of new innovation ecosystems. The Internet supports this new 'creative economy' by increasing exchanges between knowledge, science, art, design, technology, and production. The future digital revolution, enabled by the combination of cloud computing, mobile devices, social networks and the intelligent management of big data, suggests that innovative efforts are required to support future prosperity. Learning, living, working, and playing are increasingly overlapping activities. Knowledge and creative exchanges have generated diverse personal needs. New technologies have liberated education and work from their traditional spaces. The clearly defined boundaries for different activities in the past, such as factories, offices, and universities, have been replaced by networking jobs. Small companies will be more strongly rooted in cities. Dispersed and diverse local labour networks might emerge in places with greater character, appeal, and connectivity. The space and time of art and culture will merge with work and living spaces, with the city remaining as a meeting point for all kinds of services. Urban renewal will become a constant in the search for more vibrant spaces that are able to host new activities in a more socially compact and mixed nuclei. New co-working, crowd-funding, and co-housing strategies will begin to appear in the city, creating spaces and collaborative networks at all levels. The most innovative future ecosystems will demand more intelligent governments, creative professionals, small and medium collaborative institutions, businesses of diverse sizes and profiles, and research centres that are able to work together to integrate the digital and physical realms. This unprecedented technological revolution implies that any individual, small business, government, or institution has immediate access, at a very low cost, to the same computational capacity and information as large multinational corporations. An unprecedented revolution has benefitted small actors in social, political, and economic life. New start-ups do not need rigid official business incubators. In creative urban contexts, entrepreneurial initiatives can be incubated in diverse ways.[278] Technological innovation allows for an unprecedented revolution in the role of cities and their systems as nodes and innovation networks, as well as great factories of ideas and economic engines in the knowledge society.

Richard Rogers, the renowned architect, combined his sustainability principles and his confidence in technology to question how city design can promote a creative economy. Life and public spaces, education, and adaptation to the

environment are issues he considers crucial, with implications on architecture and the urban form. For Rogers, as structures become lighter, buildings will become more permeable and pedestrians can move through them, rather than around them. Thus, the street and the park will become part of the building and float above them.[279]

## INNOVATION AND TERRITORY

The impact of the technological revolution in society, predicted by analyses such as Bell's, has sparked a wide debate on the future of cities and territories in both science and popular culture. Towards the end of the 1970s, in the middle of an industrial crisis, Toffler successfully introduced the term 'third wave'.[280] He predicted a tide of change within the apparent chaos, thus signalling a new and more humane civilisation. Toffler highlighted issues we currently relate with the industrial revolution: the need for an intelligent environment, demassified media and communications, the prevalence of minorities, the appearance of techno-rebels, the relevance of the genetics industry, the emergence of the electronic home and teleworking, the corporate crisis, and a new image of nature. This whirlwind of ideas is still alive today, in greater intensity than he envisioned, with the emergence of telecommuting and the restructuring of work due to the personal computer. Beyond the initial expectations from teleworking, the ubiquity of the PC has profoundly influenced the organisation of work, more so than the transformation of the home. It is the nature of work, and in general, the production of goods and services, that deeply transforms urban life.

The contemporary city behaves like a grand infrastructure organised by networks that facilitate interaction between people and the exchange of ideas, information, goods, and services. Manuel Castells was one of the pioneering voices to discover that new technologies were an important agent for social and territorial change. He pointed out that we were entering an information age, coining the term 'Informational City'. The technological revolution has deeply affected production and exchange in an increasingly globalised economy. This is happening rapidly and in a disruptive manner, as highlighted by the now indispensable Internet, which only began to spread in 1995. In his vision of the information society, Castells emphasised how the unforeseen increase in connectivity created by new information and communication technologies (ICT) would increase the forms of exchange; where the space of flows, conceptualised as a system of places, would dominate traditional spaces. Consequently, Castells claimed that everything that will be increasingly relevant for people will be organised through networks.[281]

Castells considered the relationship between the network and the individual, concerned with the increase in inequality caused by the growing exclusion of the Fourth World due to their inexperience with new technologies. Castells claimed that the role of identity and the search for meaning are crucial in the networked society. The process of technological advancement has led to the perception of unlimited communication co-existing with identity fragmentation and deep cultural conflicts. The vital social meaning of space and time in the informational society has been deeply altered. Castells pointed out the impossibility of understanding our world without seriously considering technology. The concepts of a networked society or space of flow are useful in attempting to explain the operations of the new society. However, his description of what is happening in the world, such as global crime, the increase in urban poverty, violence, and natural disasters, is bleak. Despite the individual tendency towards nihilism and the social tendency towards cynicism, Castells had confidence in a society made up of well-informed people who are able to communicate.

Understanding the networked society and the importance of communication infrastructure – its flows, nodes, and their interactions – impacts all territorial strategies, and will greatly affect the design of cities, especially how their systems are organised in the future.

The central perception of the space of flows and its consequent networked behaviour has its history. The widespread use of the car resulted in an increase in commuting, while the telephone and its offshoots enabled an initial revolution in the distribution of housing and activity, and therefore in land use. This is what Melvin Webber had already referred to as the 'non-place urban realm', back in the 1960s.[282] The predominance of the 'non-local' demonstrated how new transportation and communication infrastructure eroded the prevailing theory, which used the traditional principle of centrality to explain urban spaces and localisation guidelines of activities and housing. With increasing mobility, the possibilities of planning became greater and have a growing effect on very large urban areas. As new urban centralities appear, it is necessary to analyse flows beyond existing centres. Castells' research is based on a careful analysis of spaces in North America where production linked to new technologies is concentrated, deducing a new understanding of allocation and concentration of innovative activities, as well as valuing the information flows generated by the activities'



The Sendai Mediatheque, designed by Toyo Ito and the Biópolis at One North, represents the potential of recombinant architecture – a new spatiality supported by the communication enabled by new technologies.

structure and their interaction system. Relatively independent interactions of greater attraction originate in traditional urban centres.

This is why Gabriel Dupuy insisted on interpreting the territory as an organisation of networks derived from the overlap of different infrastructure systems, and where accessibility determines the allocation of economic activity.[283] These networks have main nodes and corridors that determine territorial transformations. Thanks to the evolution of ICT, the post-industrial society is characterised by its extraordinary potential for accessibility and interaction – qualities that make up the urban substance. This potential has had an extraordinary effect on the structure of our urban regions, generating a phenomenon interpreted as the 'metropolitanisation of the territory' and the emergence of new centralities termed by some authors as 'super-places'.[284]

Spatial decentralisation originates from the possibilities presented by private mobility and the availability of infrastructure, thus broadening localisation options and enabling the decentralisation of some productive activities. The change in the mode of technology and development of the information society contributed to the crisis of the Fordist model – the abandonment of great self-sufficient factories. With deep changes in the time-space relations of urban systems, distance has been diminished by transport availability and the accessibility provided by new technologies. This spatial reduction has enabled an economic alliance between the city and its regional area, generated by the development of an economy linked to global and local factors over an increasingly broad area; where attractive and well-connected sites are in demand. Further distances from urban centres lead to lower implementation costs, and thus larger areas can be acquired to develop activities that use new technologies to alter their production systems and logistics. However, this has not happened at a steady pace since innovation does not occur uniformly; some local economies have strengthened against others. The diffuse urban forms correspond to a heterogeneous distribution of activity in the territory. It is not easy to model this because the pattern for each region is different. However, centrality based on spatial concentration is still necessary and the advantages of large spaces co-exist with the advantages of small spaces, and are thus compatible with new possibilities of interaction.[285]

If we had to draw maps to express the complex contemporary city, we would not be able to use old analogies. We would have had to resort to references derived from microscopic or cosmic

structures: to fractal images and the organisation of particles, fields, and lines of force; to the configuration of complex chains of matter, planetary systems, and constellations, to proteins, those enigmatic life machines, or the complex genetic codes interpreted today with graphical and numerical series, once again using cybernetic analogies. However, the loss of value of the classic centrality concept in the new economy does not immediately lead to its substitution with an equivalent concept. Spatial decentralisation processes have been spontaneous, and have generated problematic environmental and social externalities. The emerging city is defined by its dynamism, by its greater number of interactions and commutes, by the increase in connectivity (of all types), and its consequences in a society where commercial relationships dangerously dominate collective life.[286] The complex and dispersed contemporary city, with its transformation tensions, are clear examples of the new relationship between innovation and territory.

## SILICON VALLEY: TERRITORIES OF THE NEW ECONOMY

Silicon Valley is one of those privileged places of innovation, perhaps the most important. Highlighted by Boston's Route 128, Philadelphia's Route 202, Seattle's Microsoft campus, North Carolina's Research Triangle, New York, the London-Cambridge corridor in England, the Science Cities in Japan, and Bangalore in India, the knowledge society has demonstrated its unique ability to attract creativity, technological development, innovative dynamism, and wealth. These places are close to relevant universities and large entrepreneurial hubs. These places are also where the future is created, where many companies are built and where many others disappear almost without a trace and start again, where information is exchanged, and where human intelligence has unique and collaborative potential.

Silicon Valley in Santa Clara County is a place where innovation, linked to new technologies, has occurred with unique intensity.[287] The Santa Clara valley, south of San Francisco Bay and towards San José, and heir to Spanish colonisation, was a peaceful rural valley in the 1950s, with three small universities established in the late 19th century, including Santa Clara Jesuit University, San José State University, and Stanford University, which was built on a ranch called Palo Alto. A new industry emerged from Stanford's electronics lab and this new industry was closely linked to researchers such as Bill Hewlett and David Packard. From the late 1930s, and throughout World War II, the industry would grow to serve the military through the development of navigation equipment, radio, radar, and sonar. Thanks to the relationships among alumni as well as the determination of its developer, Frederick Terman, the university created the Stanford Industrial Park in 1951, the first of its kind, thus realising the idea of developing a community between academia and business. The industrialisation of information happened here at Palo Alto, rooted in the idea that new technologies needed a creative and conducive environment for communication, strengthened by the commitment of a reliable university and deeply linked to the emerging industry. The wireless telephone, laser scanner, pocket calculator, personal computer, and video game were all invented in Palo Alto, which was a rural valley until very recently.

Along a 70 km-long by 15 km-wide strip, with a surface area of barely over 1,000 km$^2$, Silicon Valley started to gradually host the technology industry. This included traditional firms that also began to move there, motivated by the availability of important funding to develop communications projects, armaments, and later, aerospace technology. Between 1957 and 1968, enabled by the industry and federal research grants, innovation in semiconductors was established in Silicon Valley by Intel and the legendary Fairchild Semiconductor (founded by the disciples of William Shockley, the Nobel Prize winner and inventor of the transistor who had moved from the East in 1955). The base of qualified labour grew until it reached a significant critical mass. Inventions such as the integrated circuit, the microprocessor, programming, the development of machine code, and the evolution of computers, were the surprising results of an exceptional situation. What happened in Silicon Valley is probably unique, although there are some extraordinarily interesting circumstances to understand how this innovation ecosystem was generated. Some scholars highlight that the cause for such an innovative environment lies in the nature of the relationships established by industry pioneers, young researchers, and professionals who often switched companies but maintained personal ties: "the revolution of flexible specialisation, interdependent associations of project teams that were linked by intense, informal communications and that mirrored the region's industrial structure ".[288]

During the 1972 Energy Crisis, large companies laid off their technicians en masse, but many of them chose to stay in the Bay Area and start anew, forming their own companies. The unwinding of the Cold War and the end of the space race reduced public funding; it was a very special moment in the free flow of ideas. Magazines such as Popular Electronics and informal groups such as the Homebrew Computer Club made knowledge exchange easier and enabled

continuous small advances. The development of new technologies had to be linked to the development of daily life, and its application to the production and management of goods and services. Computer historians demonstrated how it was also a matter of discovering new fields, which in many cases were initially undervalued, and developing innovation in them. The Altair 8800, the first microcomputer prototype, was created in 1975, although it would be three years later before Apple introduced the first proper PC. The development of adequate software was essential for its widespread use. Thanks to loans from Xerox in 1981, Apple introduced the Macintosh. That same year, IBM launched its PC and inked an agreement with Microsoft to use its MS-DOS system. The infamous dispute between Apple and Microsoft resulted in a rapid change in the market, signalling the end of the heroic era and a time dominated by the habits of new technologies.[289] There were many independent personalities who were at the centre of the networking society; outsiders and young optimistic people starting from their home garage, possessing great freedom of invention and communication. This demonstrates how the process of technological advancement is not linear and that it might develop independently from the formal economy.

Some regarded the subsequent years in Silicon Valley with concern. They were worried about the consolidation of an increasingly mature computer industry and its exposure to market fluctuations, the alleged initial creativity crisis, and the risk of the disappearance of its decentralised and interdependent model, which was supported by venture capital and a very fragmented production process. It seemed that those who could not work in the appliance industry, the great consumer of the Japanese-led electronic innovation, would not last. However, other analysts demonstrated how companies in the Valley still had a lot to contribute. New companies linked to microprocessors and their development of a more flexible model appeared, with mini-factories focused on hiring highly trained professionals, similar to one another and adaptable to circumstances, to produce specialised products. It was not only semiconductor manufacturers that moved their factories to areas with lower salaries and costs, but also groups of computer companies. Ways of working were transformed, with collaborative bonds established between the design and production processes. Companies that provided very specific services in developing machines and programmes needed production strategies that were linked to specialised suppliers. They also required design processes that were based on the needs of the market and were able to provide an incredibly rapid response to consumer demand. The speed of response was determined by the proximity of companies to each other, which was how the cluster was formed, and led to the strengthening of relationships in the network of Valley companies.

Silicon Valley's extraordinary urban growth has created significant environmental problems. There is limited land with rising prices, activities have extended to adjacent valleys, and social segregation problems have emerged. Problems with congestion and how different areas of the city function are due to jobs being concentrated in some areas, while housing has been concentrated in others. Despite this, few would deny that the area is dynamic, has the capacity for innovation, and even has the ability to reinvent itself. Scholars who have studied Silicon Valley's success, talk about the co-existence of internal factors, like the commitment of the universities, with external factors such as public funds for weaponry research or the spectacular growth of the entertainment industry. The development of networks that promote interaction has been key. In the case of Silicon Valley, highly innovative companies have tended to cluster because they need to learn from one another and develop their own competitive advantage in an ecosystem of interrelated companies.[290]

It is precisely this idea of the need to develop focused clusters of innovation and advanced technology companies which has led to the promotion of science and technology parks at the end of the 20th century, albeit with mixed results. The debate arose as to how to promote innovation and create places of distinction that were focused on technological development. The discussion concerning the responsibility for financing and promoting these initiatives shows that the public sector has played a leading role in different countries. The Japanese case illustrates how the pioneering experience of Tsukuba Science City, conceived towards the end of the 1950s, evolved from a 'closed' model created from a public initiative in the surroundings of Tokyo, to a more open public-private collaboration, as exemplified by the more successful example of Kansai in the 1980s. In a unique case, India decided to concentrate its efforts on technological research in Bangalore. In Finland, with Nokia as the flagship enterprise, great public support for education emerged and led to social change, while innovation and new technologies were also encouraged. Microsoft's 2013 acquisition of Nokia demonstrates the search for new synergies between cloud computing and mobile devices. Similar to what happened in Silicon Valley, the restructuring of the labour force after the merger enabled lots of talent previously linked to Nokia to join the ecosystem of professionals and small businesses that could reinvent Finland's economy.

Against the apparent spontaneity of technological innovation, there have been public sector initiatives towards the late 20th century to develop technology parks. These parks aim to evolve traditional industrial spaces by attracting companies with strong research and development capabilities. The first generation of technology parks were located in suburban areas and developed to establish companies and research centres of different sizes and profiles. This propelled the creation of new entrepreneurial initiatives, with business incubators (unified management spaces serving startups) contributing to their success through guidance, access to a network of contacts and venture funding, and the co-managed provision of basic services. These initiatives were developed in different ways with varying results in different countries and cultures, although public initiative and the aim of attracting private investment were always involved. The key question remains: how does the urban environment influence the potential for innovation?.[291]

The innovative capacity of companies, the flexible use of new technologies, collaborations with other companies, the type of labour force, and the characteristics and uniqueness of cities are key issues of the new productive organisation. Innovation is not a task for isolated inventors, instead it arises within networks capable of spreading information within a highly skilled environment. The required conditions are highly-skilled labour, adequate infrastructure, and proximity to decision-making centres that co-ordinate public and private funds. Institutions and the availability of funding influence the chances of technology enterprises succeeding. Local social networks that provide information and relationships are also crucial to their success. Innovation tends to happen when the networked society, which is the core of the information society, works.[292]

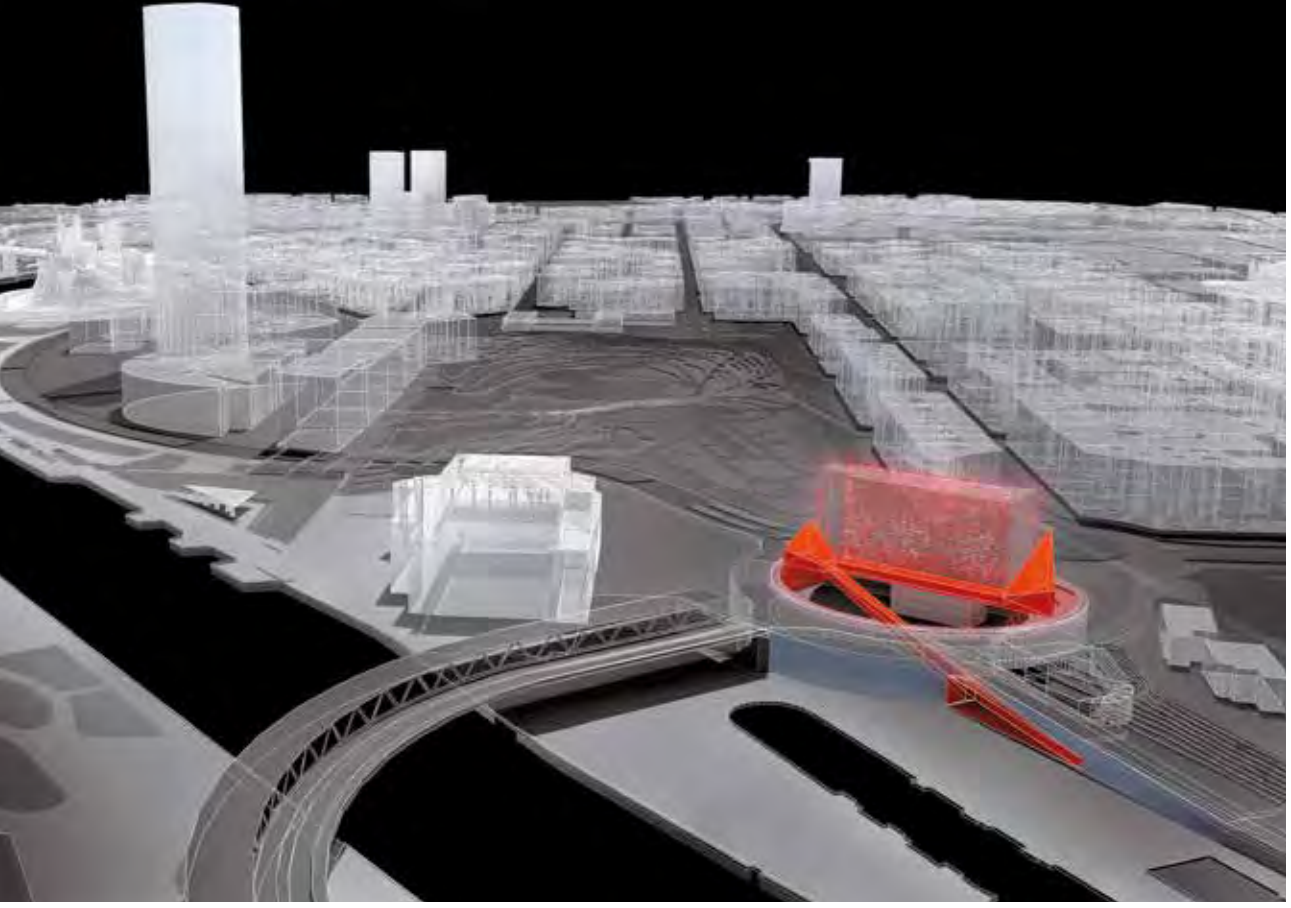
Promoting technology parks soon became a strategy for economic development and regional policy to encourage innovation. In France, the state promoted a technology park in each regional centre with rather successful outcomes in cases such as Sofia-Antipolis, which is located in the charming landscapes of Côte d'Azur and close to Nice. In Germany, technological development grew, enabled by universities and, above all, by large companies developing their own innovation initiatives with unique specialisations in areas such as in Munich's periphery. Based on their respective political and administrative areas, technology parks were initiated by the different Spanish Autonomous Regions. Some noteworthy examples are the Vallés technology park in Barcelona, Tres Cantos in Madrid, Cartuja in Seville, Zamudio in Bilbao, and Boecillo in Valladolid. However, true innovation development in Spain is happening around large metropolises with sufficient critical mass and a greater potential for global interaction, mainly in Madrid and Barcelona.

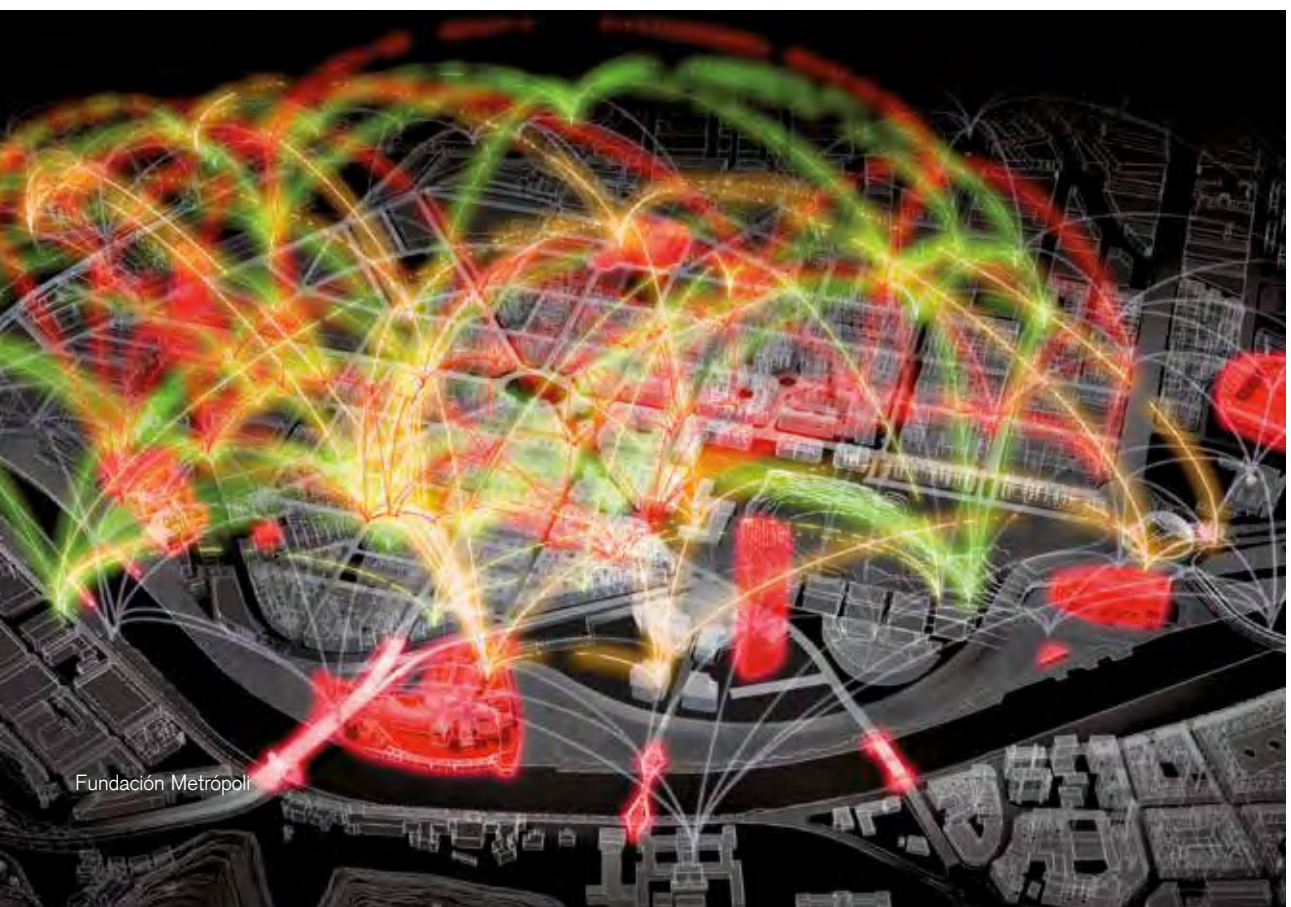
In Great Britain, apart from the developments around universities spearheaded by Cambridge and Imperial College, innovation has been linked to very different urban efforts. The previous generation of New Towns were able to offer attractive spaces for new activities. Local governments, however, have endeavoured to connect urban regeneration processes to the information society, offering adequate space for the development of emerging companies in places such as Manchester, Glasgow, Leeds, and Newcastle. These are spaces where industrial restructuring had resulted in a distressed future and where, since the end of the 1980s, an unprecedented effort has been made to transform their economic structures.

Innovation nodes of the digital revolution were not only located in technology parks at the periphery of cities. As we will see in the following sections of this chapter, spaces for new technologies have been increasingly accommodated within our inner cities. Where space is available, there are synergistic possibilities, combining uses, spaces, and buildings with character and with opportunities for transformation. Creativity and innovation benefit from places with a strong identity, where our society's talent has found attractive environments to live, work, play, and learn. In places of great urban density such as New York, Tokyo, or Central London, the vitality of the local innovative economy is surprising. Perhaps in Europe and many other places in the world, future technology parks will be located in historic centres and rejuvenated spaces from past industrial eras.

## THE CITY AFTER THE DIGITAL REVOLUTION

In 'Cyber Cities', M. Christine Boyer questions the immaterial reality of a networked society in an electronic domain, behind screens or through new electronic devices, which has led to the growth of virtuality.[294] In the space of flows, images seem to overshadow language, therefore when information is packed into images and packets of data, fragmented and contradictory shapes of knowledge are produced. This allows for a certain withdrawal from the world – and from reality – since sensory perception, especially visual, is very sensitive to immateriality's supremacy in cyberspace, in a world that is simultaneously real and imaginary. This concept, coined by science fiction writer William Gibson in 1984, proposes the analogy between the network structure of a large computer





Fundación Metrópoli

Digital technology is perfectly compatible with traditional urban structures, as exemplified by Fundacion Metrópoli's proposal to transform the Ensanche area of Bilbao into a digital district.

and a bird's eye view of Los Angeles.[295] As if it were a large metropolis with no centre and no boundaries, cyberspace represents a place of this new emerging virtual reality. In 1995, when he was head of MIT's prominent Media Lab, Nicholas Negroponte, a computer scientist and architect, claimed in his book 'Being Digital' that computing has little to do with computers, but with life. The emerging digital city takes place within the existing city.

How we perceive and relate to the world is being altered, even the way our body interacts with its environment. The analogy of the machine in an industrial society, together with the enthusiasm for the future it evokes, has been included in the design of dwellings as 'living machines' and in the overall design of the city. The analogy of the computer in the post-industrial society – or post-modern – is disturbing. It is not only about gadgets in the cyberworld: code replaces regulation.[296]

What are the possible effects of the digital revolution in the city of the future? The late architect and urban designer William John Mitchell explained that, in the 21st century, the condition of 'civilized urbanity' would engage less upon the accumulation of things and more upon the flow of information, less upon geographic centrality and more upon electronic connectivity, as well as less upon expanding the consumption of scarce resources and more upon intelligent management. Increasingly, as Mitchell believed, we will discover that we can adapt existing places to new needs by rewiring hardware, replacing software, and reorganising network connections, rather than demolishing physical structures and building new ones.[297]

Like other authors examining the future technological society, Mitchell tried to free himself from technological determinism through e-topia. He advocated vital issues such as the importance of the physical space and its 'presence' in social and economic relations. What would be truly remarkable is to overcome the apparent contradiction between the simultaneous increase of connectivity and individual isolation, leading Mitchell in his initial 'metaphor-lamentation', to demand the reinvention of the public space. In his reflections on the digital city, before the smart city concept became widespread, he envisioned the improvements that an innovative environment with digital infrastructure would be able to introduce to the urban fabric. He believed in the importance of infrastructure that was derived from the new networks and their possible adaptation to existing urban structures. Mitchell also foresaw a future capable of overcoming the screen's limitations,

penetrating virtual reality as if it meant overcoming the limits of the scenario. This refers to an 'augmented reality', where interactive opportunities multiply. The possibility of sharpening our eyes and ears through digital technology, the appearance of intelligent objects, and their systematic incorporation in housing, offices, cities, and even clothing, can inspire both hope and fear. According to Mitchell: "21st century cities will be systems of intelligent, adaptable places, saturated with programmes and silicon, interconnected and interrelated ".[298]

In this context, where the relationship between housing and work is being altered by the different and more flexible use of time, the digital city will become increasingly complex and will require planning to adjust for the complexity derived from interactions. Mitchell argued that the availability of potential choices will draw citizens towards the most attractive places in terms of climate, cultural heritage, landscape, and the environment, thus empowering unique and significant places in the city. He also considered the adaptability of new technologies for traditional urban structures. Aware of the risk of a dual city and the appearance of new invisible frontiers, Mitchell's preference for the revitalisation of local life has not been diminished, arguing that the illusion of the community can be maintained, with individuals belonging to multiple, overlapping virtual communities. Contradicting the late urban designer Melvin Webber's 'community without propinquity', Mitchell trusted that digital reality would strengthen social relationships and complement the physical realm.

Currently, the digital city is more apparent in the workplace. We stated before that the PC, initially viewed as a home computer, has barely transformed domestic life. However, it has radically changed working conditions; from workshops or small businesses, to the most complex production processes. Thanks to the creation of laptops, any space can become a workspace – be it a train or a hotel lobby. The strategic value of innovative environments, the almost unlimited options of customising production and consumption, the possibility of selling before producing, the exchange of intangibles, offshoring, the extraordinary potential for control of manufacturing and logistic processes, or even the simple reconfiguration of the workspace, are important in helping to understand the great impact of the knowledge society and digital technology in the contemporary city, especially the future city.

In 'Digital Places',[299] Thomas A. Horan, one of Mitchell's protégés, tried to anticipate how new technology could create connected and liveable places that appeal to people and investors. The attempt to balance cyberspace and physical space can be achieved through the adaptive potential of electronic technology. Mitchell's 'recombinant architecture' (integrating architecture) proposition strengthens the idea of the digital world as a place in itself. Starting from existing places, some spaces might remain unplugged, while in other spaces, technology may adapt to incorporate new elements or undergo a deep transformation to ensure a continuum of digital places. The principles guiding design in digital places include: fluid allocation, guaranteeing interaction between places and flows, abundant meaning in the synergy between physical and virtual spaces, connections at the doorstep allowing connectivity between both realities, and democracy in design to foster integration and user engagement. All these principles can be applied at local, urban, and regional scales. Horan proposed a method to convert the home, the workplace, commercial areas, and other locations linked to tertiary places such as cafés and clubs, into a connected technological platform, connected by a slight increase in their complexity. After transforming the community facilities, we can achieve the design of an Intranet or local digital community that recreates lost places and allows for public spaces, whether real or virtual, that enable stronger relationships between community members. This has already occurred spontaneously in the innovative urban spaces of co-working and social activism. We must enable global territories at a regional scale, ensuring a connected network from valleys to avenues. Horan believes that an integrated landscape will result in the incorporation of digital technology options into the values of traditional places and community spaces.

In our current urban environment, the urban revolution has been integrated with the conventional infrastructure network.[300] The city is a result of complex socio-technological processes. Urban planning must connect new scales, combine the new and the old, and provide the whole city with a new coherence. This is the role of Mitchell's recombinant architecture. He aspired to mend public spaces, where new technologies could, at least partially, 'connect' fragments. Urban planning must reinvent itself within this new context; perhaps it can only enable or disable options, prioritise or postpone situations, connect or disconnect spaces, promote transformational initiatives, uncover opportunities, or suggest future options. These will occur on the fringe of traditional aspirations, to plan in advance the top-down elements of the emerging complex urban reality.

The architecture emerging from this confusing metropolis needs to be understood in a new way. Perhaps the only possible way to do it is as a cyborg, a man and machine hybrid; a fictitious gaze on a territory that overly resembles computer games such as SimCity. We need to somehow decipher the code we encounter when moving, not only through cities such as with the situationist

drift, but also through urbanised territories full of information and opportunities. It is easy to sense that there is a deep relationship with our increasingly visible and ubiquitous electronic machines. This is programmed chaos; the result of an increasingly urbanised economy and a city that has vanished under an ideology of freedom and autonomy. We think about the contrasts between speed and waiting, chance, and the sequence of micro-events that are products of the specific choices that characterise daily life. The spaces that define our urban experience live in non-places or in super-places, spaces that are inhabited in transit.[301] We can no longer talk about peripheral areas since the relationship principles of the historic city no longer exist. Networks have expanded and provided life to the whole territory; leading to the possibility of a general theory of networks as advocated by Gabriel Dupuy, an expert in spatial planning. Contrasting with overlaps in other spatial and immaterial realities, this general theory may explain the geometry and organisation of planning, with great interest in its boundaries or limits, its interfaces and thresholds, and with what can only be perceived by a cyborg: "Far from the unitarian image proposed by the perspectives of ideal Renaissance cities, contemporary urban territories are expressed as a juxtaposition of entities without links between them, residential neighbourhoods, shopping malls, stations and airports, industrial areas, served by railway infrastructures, roads, and interlocking highways".[302] We are still trying to understand this.

Urban planning and architecture need to reinvent itself in the digital society. Large containers, shopping malls and leisure centres, terminals and stations, airports, as well as logistic and transport centres, are where transit situations and consumption, disguised as experiences, prevail. Everyone can be together in these places while being somewhere else at the same time, connected through their cell phones.[303] Urbanism and architecture can still play an essential role in this liquid WhatsApp city. Toyo Ito's 2001 Sendai Mediatheque in Japan, demonstrates how in a 'media building', the information function that serves knowledge and dialogue, can overshadow other functions. It is a space that was created to simulate 'being inside' a computer – an open, flexible, and completely artificial space to facilitate the interaction between physical and mental spaces. The building's structure has materialised that intent, having been constructed with steel tubular columns that resemble bamboo bundles and enclosing services with clean platforms at different heights.



## THE SMART CITY MOVEMENT

When we discuss 'intelligent territories', we accept the significance of innovation in our cities. We want to express how urbanism can provide a better quality of life for people and a greater competitive advantage for businesses. We want to express how territories have the capability to reinvent themselves, thus generating spaces that stimulate the rise of a creative society. Similar to what has been seen when studying the transformation process of the city in a 'society of knowledge', the spatial dimension of innovation has been shaped from the interactions between economy, society, and territory.[304] In open and advanced societies, talent enjoys greater mobility and can choose where to work and where to live. The urbanist Richard Florida's original idea about the creative class and its capacity to transform cities makes sense in this context. Tolerance, talent, and technology are key enablers for innovation and can be significantly influenced by urban policy and city design.

Although the intelligence and creativity of a society – the potential of its human capital – may not be easy to measure, some indicators indirectly offer valuable insights such as the concentration of prominent scientists, cultural and artistic vitality, business creation dynamics, patent generation, research funding, and population education levels. These indicators enable comparisons of cities and help them reach their goal of achieving creative and intelligent cities, stimulating innovation, as well as economic and social development.

Technology can become a great catalyst in the construction of intelligent cities. The Smart Cities movement marked the collaboration between different stakeholders, such as technology companies, city governments, development banks, and research centres, to explore the opportunities offered by technology to make cities more efficient. This will ultimately, 'prepare them to face their future'.

The adjective 'smart' has sometimes been used indiscriminately when referring to both unrelated initiatives and high-impact projects. This has led to confusion and undermined the true role of technology as an engine for innovation and city development. The Smart City movement can be described as large technology companies leading global-level initiatives in applying a cutting-edge arsenal of technological solutions to the urban sector, with the aim of optimising urban efficiency. Through this process, large corporations are also nurturing a whole ecosystem of smaller partners capable of providing specific solutions to the unique needs of each city. Many cities are collaborating with corporations and

research centres to pave the way for the provision of more efficient services; in some cases, towards a technological utopia as seen in Busan's U-City Master Plan in Korea. The plan included the Information Superhighway, several traffic optimisation programmes, and initiatives to bridge the digital divide between citizens.

The Smart City Expo World Congress, organised by Fira de Barcelona, has recognised the need to promote the intelligent cities industry, adding: "The ultimate reason for a smart city is to achieve efficient city management in all areas (such as urbanism, infrastructure, transport, services, education, health, public security, and energy), while simultaneously satisfying the needs of the city and its citizens. All this must be achieved while observing the sustainable development principles presented in the United Nations' Agenda 21 Programme and understanding that technological innovation and co-operation among economic and social agents are the main drivers of change".[305] The Telefónica Foundation also considers the Smart City concept as "a city that uses information and communication technologies as critical infrastructure, where components and public services offered are more interactive and efficient, and citizens can be more aware of them."

Under this broad umbrella, local authorities tend to assume the benefits of technological innovation when sharing the Smart City official discourse, without discussing its potential conflicts with sustainability or social cohesion. However, it is large technology and service companies that are promoting this movement, recognising the immense business opportunities emerging from the provision of technological services and solutions for cities. These services include the efficient management of diverse urban issues such as transport, energy, water and waste management, telecommunications, stewardship, and citizen participation through electronic government strategies. Different corporations have developed indices[306] and awards, as well as established alliances and partnerships with cities, in order to become the great suppliers of these services. A few large technology corporations have promised greater efficiency in managing urban services by providing different technology layers for selected services; however, they have done so without deeper consideration for the symbiosis between technology and a shared city project.

An important breakthrough in the development of the Smart City movement has emerged from innovative concepts and tools designed by leading technology corporations and prestigious research centres, such as the Massachusetts Institute of Technology's Media Lab or University College London's CASA (Centre for Advanced Spatial Analysis). In line with this, official research programmes have been launched globally, particularly the European Union's Horizon 2020 Programme, aimed at integrating the technological elements of smart cities within the definition of a city project. Singapore has also launched its ambitious Smart Nation project. After the Daiichi nuclear plant accident in Fukushima in March 2011, Japan also launched a new smart cities policy to demonstrate the potential of Japanese urban solutions, with a special focus on energy optimisation. Similarly, in 2015, Yokohama also organised the fourth Asian Smart City Conference, aimed at leading this Smart City movement in line with global urban growth. The main goal of this event was to form the Asia Smart City Alliance.

There are great opportunities for smart cities to provide access to and facilitate the intelligent management of big data, thus enabling new ways of interpreting the urban fabric and intervening positively in its processes. From a disciplinary viewpoint, using new technologies will challenge the typical static models of urban science, city management, and city government. Access to real-time information, the use of mobile devices, interaction with mobile applications, and increased transparency and accessibility in data access – such as bank transactions, consumption habits, the use of public services or real-time pedestrian traffic, vehicles, and goods – allows us to understand the surprising results from the unique dynamism and conditions of urban life. We are barely at the beginning of the great challenge of interacting with big data located in the 'cloud', requiring more efforts that will enable us to selectively and intelligently use it.[307] We must encourage advances in the understanding of contemporary cities and urban systems, generate detailed real-time maps of the different dimensions of the city, and understand the complexity of the city to enable decisions for its improvement. In this context, a smart city refers to the new tools of interpretation and intervention in this complex reality, relying on the 'intelligent' use of new technologies in diverse areas such as electronic government, information and energy flows, city use levels, transport systems operations, social change processes, and service management, confident in the role of new technologies that encourage city governments' progressive transformation to become more transparent and participatory.

An essay in the Scientific American titled 'Designing the Urban Future: Smart City'[308] has made a very interesting contribution towards the meaning and impact of the Smart City movement. One of its conclusions was that technology could contribute, not just in making cities more efficient and sustainable, but

also in making them more egalitarian. Some authors defend the main role of citizens in innovation, as people and their creativity will boost development towards a new 'social nexus': "If we focus on sociability as the starting point for design and tapping citizens as the source of innovation, how do we go about crafting a smarter city?".[309] An increasingly rich and diverse system of checks and balances will make cities smart, because networked cities will not only allow citizens to monitor what their government does or does not do, but also offer citizens valuable information for their daily and public lives, and in their social relationships. There is already proof of this. Due to their interactivity, new technologies have allowed the public to engage in top-down projects, but they have also opened endless interactive initiatives from bottom-up strategies. How can this new accessibility of information influence urban governance? The uncertainty of any social change has grown and confusion has happened due to the speed at which technological innovation and social creativity have been introduced. People matter – they express their opinions and make decisions. Promoting the smart city cannot be restricted to technological, instrumental, or functional progress.

There is a risk in urban policies which hide behind the innovation 'propaganda' and in 'all for citizens but without citizens' attitudes and behaviours. It is logical that the role of the service provider must evolve as new paradigms appear in the division of responsibilities between the private and public sectors. For instance, the manufacturer of urban lighting today aspires to manage all the lighting of a city to achieve greater efficiency and savings. The organisation that builds the subway and maintains trains, wishes to manage the entire urban transportation network. The same goes for services such as water management, energy generation and distribution, waste management, security systems, and digital platforms. However, society's evaluation of the quality of the service provided has also evolved. The citizen paying for infrastructure improvements through taxes is not only a customer but is also an end-user. To consider the smart city solely as an efficiency issue would be inaccurate. In the short term, it would also be unsuitable to consider the smart city as a city with the most advanced digital technology. It is not only a business opportunity; the metamorphosis of cities and their governance are at stake. All cities can provide smart and integrated technologies to improve the efficiency of urban services, however the main challenge is that technological shifts and digital dimensions must inspire city projects and help construct the city by enabling hybrid and open urban design strategies. Recall that the city is not just a conducive space for co-operation, but also a space for conflict, where every citizen and group can convey their aspirations and expectations. The Smart City movement's greater contribution to the building of future cities will be to establish instruments that define the city as a collective project and build citizens' trust, empathy, and ability to self-regulate social processes.[310] Beyond the technological dimension, the Smart City movement might contribute by promoting the goals of a sustainable, competitive, and socially-balanced city, allowing for a new alliance between knowledge, technology, and social progress in the quest for intelligent territories.

Various initiatives have been proposed to advance this idea. A course at MIT titled Beyond Smart Cities has highlighted the need to intelligently manage the challenges of urbanisation. Technology requires an adequate urban approach to manage the city of the future. The MIT course has introduced, for example, the idea of compact urban cells to guide the transformation of current expansive and unsustainable models. Research conducted by the Fundación Metrópoli on Digital Diamonds and polycentric urban centres in medium-sized cities, uses technology to drive territorial competitiveness at this new scale. In addition, the seminars and research by Singapore's Centre for Liveable Cities, similarly titled Beyond Smart, focuses on the use of technology to achieve urban quality and liveability. These are outstanding examples of cities that have successfully used technology to improve the quality of life and the environment, simultaneously increasing a city's creative capacity and the competitiveness of its economy. These are special places where technology integration can inspire an intelligent city project, serve citizens, and help build an innovation ecosystem capable of attracting talent and sustainable development.[311]

## DIGITAL DISTRICTS IN THE CITY CENTRE: YOKOHAMA, DUBLIN, BARCELONA, GUADALAJARA

Some new cities under construction, such as Masdar in Abu Dhabi, Palava in India, and Songdo in South Korea, are spearheading the Smart City concept. These cities are important efforts in technological innovation; they are creating future labs for urban solutions experiments. Besides these greenfield projects, new opportunities have also appeared in traditional urban spaces. Through urban regeneration and technological innovation, centrally located places may become the most relevant innovation nodes of their metropolitan areas. These are places where the creative economy and cutting-edge digital technology integrate with traditional spaces, in environments with significant heritage and valuable identities. In this context, the Smart City concept can be greatly enriched if integrated into the urban regeneration of existing cities. Big cities such as Tokyo, New York, Berlin, Milan, Vancouver, Mexico, and London are experiencing a true renaissance in both central areas and traditional outlying districts. Sometimes, medium or small cities successfully apply new digital technologies that relate to urban regeneration and innovation processes within the city, resulting in diverse outstanding initiatives where experiments in unique regeneration have relied on creative activities. This is exemplified in cities like Medellin's Ruta Ne, Eindhoven's Brainport 2020, the transformations at Nantes, and George Town, the capital of Penang Island in Malaysia, which is a UNESCO World Heritage Site.

Although sharing common characteristics, transformation engines have distinct profiles in each city. We have chosen four cities: Yokohama, Dublin, Barcelona, and Guadalajara, as models in the dialogue on creativity, digital technology, innovation, and urban regeneration. These cities are developing an 'innovation ecosystem'.[312] Their initiatives are currently in different stages of development, but can be a model for other cities around the globe.

Yokohama is a clear example of an integrated urban development where planning and management is focused on improving urban quality in a highly congested area with many initial difficulties. Located on the Western shore of Tokyo Bay, Yokohama is Japan's main port and the country's second city, with 3.5 million inhabitants. It is situated in one of the most complex and dense urban regions on the planet. The drive for change has to overcome the great inertia of its built reality. Urban regeneration catalysed Yokohama's outstanding transformation process, which was awarded a Special Mention in the Lee Kuan Yew World Cities Prize 2014. The transformation of the Minato Mirai 21 area, which means 21st Century Port, deserves a special mention.

This initiative began in 1981, thanks to strong partnerships between multiple stakeholders to create a new urban centre over the former port. The project was designed with a robust infrastructure improvement plan including a subway, a new bridge, district heating, LED lighting, and environmental regeneration. Today, Minato Mirai is a crucial node in Tokyo's metropolitan area. At the same time, the revitalisation of Yokohama's Chinatown in transport, culture, and urban facilities now co-exists with the ambitious Yokohama Smart City Project. The main reason for Yokohama's transformation model was to create an international example of the struggle against climate change, with the co-ordinated management of the three most important urban areas: Minato Mirai, Kohoku New Town around the historic urban centre, and the Yokohama Green Valley's industrial and residential areas. The promotion of wind and photovoltaic energies has been supported by Yokohama Style, an initiative of large tax deductions for corporations to provide green energy. Yokohama is an example where conventional urban regeneration has become an integrated and creative urban project. It is where innovation stands out due to its combination of simplicity and ambition to serve citizens.[313] Yokohama has also expended great efforts towards internationalisation and sought alliances with the private sector, especially with large Japanese corporations, to create a lab for urban solutions that might inspire projects around the globe. The Asia Smart City Conferences have spread Yokohama's efforts to lead the Smart City movement in Asia through innovative projects such as intelligent infrastructure, electric cars, and end-to-end waste recycling. The success of Yokohama's transformation has been demonstrated by its economic performance. In 2014, the city had one of the lowest unemployment rates in Japan and attracted almost 2,000 companies, including important ones such as Nissan, Mitsubishi, Accenture, and Tata. In order to provide continuity to the urban innovation strategies and drive the economic sector of urban solutions, Yokohama created the Y-Port Center, aimed at strengthening a knowledge node around the intelligent management of cities. This centre, led by Yokohama, is supported by the government of Japan, development banks, private corporations, city networks, and research centres. The goal is to collaborate with cities in emerging countries and contribute to their development by sharing knowledge, technology, and urban solutions.

Dublin's Digital Hub initially arose during Ireland's Celtic Tiger period at the end of the 20th century, when its economy was expanding due to the presence

of North American technology corporations in the country, which drove the economy and boosted R&D. International openness, an aggressive tax policy, an emphasis on education, and structural funds from European integration, allowed the entire country, and especially Dublin's economy, to take an unprecedented leap. After the initial planning stage led by the city government, a Digital Hub was established in 2003. This included the formation of a national agency to manage an innovation cluster that combined the city's existing regeneration efforts with the development of high-tech companies and the attraction and training of talent. There have been significant urban rejuvenation examples in Dublin,[314] such as the refurbishment of the Temple Bar, with 14 hectares in the historic centre, named after the former Templar monastery, located beside the Liffey River, and next to buildings like Trinity College, Parliament, City Hall, and the Cathedral. In 1991, a state-supported management organisation was created. This organisation held a competition that was won by a team of Irish architects. The programme called for the refurbishment of valuable existing buildings and the filling of empty plots of land with new architecture, respecting the original structure while promoting hybrid uses. Initially, it focused on culture, such as cinema and photography, while encouraging the establishment of shops, restaurants, and both housing and innovative activities linked to new technologies. The neighbourhood's population increased by roughly 3,000 inhabitants while attempts were made to avoid gentrification. Other regeneration projects, such as the Historic Area Rejuvenation, began in 1999. This was an integrated planning area around the Smithfield Civic Space, the most important open public space in the city over a local market famous for its horse fair.

The Digital Hub was designed in a neglected area of the city, with old factories in Dublin's Liberties/Coombe neighbourhood and around an old Guinness brewery. The Strategy Document justified the initiative by targeting vulnerability in Ireland, an area immersed in the uncertainty of the global economy, with the need to create an information infrastructure. Its long-term vision was focused on creativity and learning. It had an initial public funding budget of 130 million Euros, while the remaining funding came from a public-private partnership.

The initiative proposed to expand the rich local industrial tradition, promoting a modern space for work in an area with unique heritage, morphology, scale, and character, as well as a place where a local community with a strong identity could emerge. With a refurbished old windmill as the central landmark, urban exploratory operations were conducted to understand the different buildings and plots. The founders of the project established a centralised management and strategic alliance with MIT's Media Lab. The restoration of an area in the urban centre offered the ideal grounds to develop an atmosphere of innovation, a mixed urban environment, and a new economic cluster within the city centre where the old and new could merge. It would have been easier to move into the urban periphery, as is often the case.[315] Dublin's vision and courage in promoting projects such as the Digital Hub is a good case study for many other cities. The successes and lessons from this project, with its up and downs, are an example in understanding Dublin's innovative character and its commitment to urban regeneration.

The Irish model has today been revived and is actively adapting to a new context. Ireland was one of the European countries that suffered greatly in the 2008 financial crisis but was also among the countries that strongly recovered after 2015. A good example of this is the momentum and on-going achievement of the Civic Spine project. Its 6 kilometres have become one of the most important public spaces and urban regeneration projects in Europe. The project's goal is to connect the most important historic spaces of the city centre and create an integrated experience for residents and visitors, while promoting entrepreneurial activities around a compact and well-connected city with valuable cultural heritage. Other examples of the dynamic creativity of this city are the important projects currently being developed, such as working with communities to regenerate homes and the Grangegorman Urban Quarter. Many of the management mechanisms and principles used in this new generation of initiatives and projects were inspired by the Digital Hub.

The transformation of Poble Nou into the 22@Barcelona digital neighbourhood shares Dublin's idea of searching for new initiatives. It has been financed by a combination of public and private funds, and uses a toolkit that encompasses proper urban design, consensus planning, open tax policies, and an effective corporate promotion strategy. Since 2001, its city council has been promoting a complete transformation, aimed at creating an attractive work and innovation space in the heart of the metropolitan area. This is an underused space in Ildefons Cerdà's Eixample (15 blocks over 200 hectares), a popular neighbourhood in Barcelona's historic periphery where factories co-exist with the 'new village' (Poble Nou). With driving forces, such as the Audiovisual Campus (a cluster of mass media and ICT corporations), agreements were made with universities, biomedical research centres, and relevant companies in the energy and financial industries, complete with new cultural and social amenities. Two elements stand out in the 22@Barcelona district: the willingness of Barcelona's

City Council to collaborate with various public and private stakeholders, and an unusual combination of urban regeneration and architectural innovation. Despite the deep financial and real estate crises that Catalonia has suffered since 2008, Poble Nou maintained its charm and has launched into the future as a smart city model. With this space, Barcelona wants to present itself to the world as an innovative city. Perhaps one of the major weaknesses of this project was the excessive dominance of the public sector, especially the city council – the municipal company, 22@Barcelona, manages the district and is backed by the autonomous region. However, the intensity and creativity of the international management and promotion of this urban regeneration area, with instruments such as the Urban Lab that are linked to the smart city movement (created to promote innovative solutions in mobility, urbanism, infrastructure, education, digital apps and other areas), can be developed inside the district. The district has become a test bed for entrepreneurial initiatives, whose products and services supported by ICT, can improve urban life.

True innovation also requires spontaneity; it is not only exceptional and unrepeatable, but is often an indirect result of unique and favourable circumstances.[316] Every situation has diverse phenomena, but to a certain extent, these phenomena have become common within the last two decades. In urban areas with strong economies, such as London, New York, San Francisco, and Vancouver, the new economy has driven the deep transformation of significant areas in the inner city. Due to the favourable context offered by the vitality and size of the cities, and their human and cultural capital, emerging sectors can foster urban regeneration.

Whether a consequence of active public policies or the dynamism of large urban areas, the new economy can play an exceptionally transformative role in emerging countries. Examples include the digital districts that have emerged in the more dynamic countries of Latin America, such as Mexico, Brazil, Colombia, and Chile. The potential for innovation to generate development, and even urban regeneration in difficult contexts, has been tested in these countries.

This is what the Creative Digital City in Guadalajara, Mexico, has proposed. It is a national project aimed at 'developing a creative environment' at the heart of the city's historic centre, promoted by the Federal Government through Proméxico, the State of Jalisco, and the Guadalajara City Council, as well as supported by universities and, more importantly, the digital industry cluster operating in Jalisco. The project's design, contributed by MIT's Carlo Ratti and Fundación Metrópoli, among others, has conceived the transformation of a part of the city centre using the idea of a smart city. The area around Parque Morelos is destined to become the 'first global node of creative digital production in the Latin world'. The Master Plan (2012) established the details of a project that seeks investment and human capital through the audio-visual industry and innovation in mass media.[317] This specific field of economic development co-exists with a clear social outcome. It aims to build an inclusive city where the quality of the urban environment favours the holistic development of the local community; thus, balancing the new economy and social cohesion with a unique profile to improve urban infrastructure and harness ICT to support a 'digital lifestyle'. The idea of the future city has again permeated the historic centre and facilitated the transformation of the urban system from within. The Creative Digital City occupies an area of approximately 40 hectares surrounding Parque Morelos, but has catalysed the transformation of a much larger territory: over 300 hectares known as the 'Mosaic', including new residences and the implementation of new synergistic economic clusters with digital development, such as health, tourism, design, and retail, all within a central urban environment with great historic, as well as artistic value.

## ONE NORTH, SINGAPORE

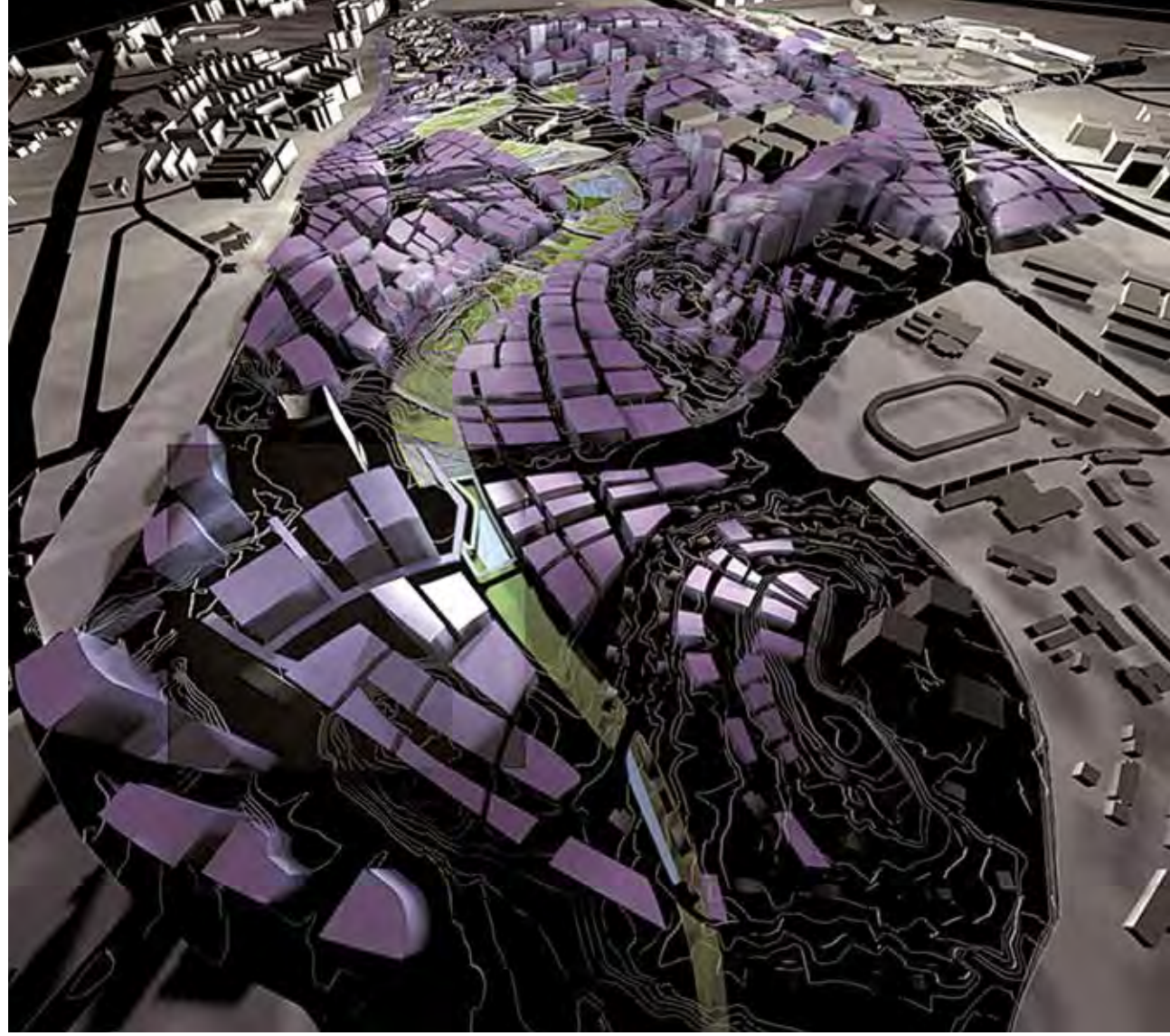
One North is a technology district in Singapore, conceptualised as an innovation node that strives for the excellence, efficiency, and pragmatism – attributes that have characterised Singapore since its independence in 1965. Based on its social and economic success, the government of this city-state, as advised by international experts, has developed an exceptional site intended to foster imagination and creativity; a quality environment stimulating innovation in action and in thought.[318] One North is located at Buona Vista in the middle of Singapore, on a strategic site of 200 hectares, to develop its biotech and multimedia innovation profile. The technology district is near existing renowned scientific parks, the National University of Singapore campus, the National University Hospital, and close to Holland Village which is a trendy district. One North was established in 2001 with a 20-year development timeframe and designed with an attractive mix of academic, research, entrepreneurial, artistic, retail, residential, and leisure functions. Biopolis, a biomedical research centre, was the first phase to be developed and completed with the first phase of Fusionopolis – a science, engineering, and new technology research centre in the 16-hectare central park. In 2012, the Star Performing Arts Centre was completed at The Star, a commercial

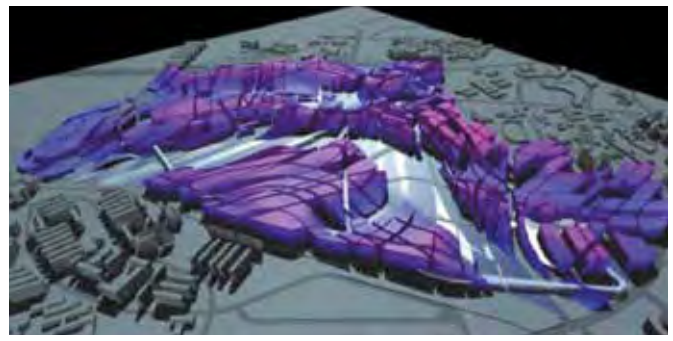
zone. Besides this, other centres such as Pixel, Vista, and Mediapolis, as well as residential areas, have been developed. The idea was developing not just a workplace but a place to live, work, have fun, and learn, and where 'ideas can grow'. New technologies, such as communication infrastructure and work tools, supported this project to achieve an ideal, liveable atmosphere.

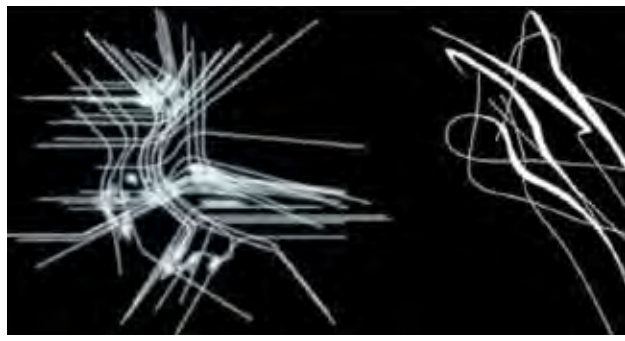
One North achieved a smart balance between real estate and the promotion of economic development, innovation, and the development of high-skill labour. Designed to stimulate the senses and imagination, the keys to One North are: talent (creating the conditions to train and attract talent, in order to develop innovation activities that will advance the country's new economy); lifestyle (ensuring quality in buildings, public spaces, facilities, and infrastructure, where connectivity between places, institutions, and different professionals is fast and efficient); and opportunity (enabling synergy between research and industry, and investment that promotes innovation).

The project is aimed, not only at attracting creative professionals who are able to innovate in future fields such as biotechnology and multimedia, but also to enable spaces for the new economy to create, promote, and maintain a vibrant and diverse community of innovators, students, professionals, entrepreneurs, researchers, venture capitalists, lawyers, e-commerce experts, artists, and journalists who are able to interact, conduct business, and have fun. The goal was not the space itself, but the people; talent that is attracted to a unique environment and who wish to belong to a cosmopolitan and experimental community. Funding for education is one of the key elements in the strategy for One North. One North provided an appealing environment equipped with world-class facilities where the creative class can engage in different activities, including leisure and relaxation. Creativity is stimulated through art and artists, through the interaction of people from diverse professional and cultural backgrounds. The area's allure, the creation of an innovative environment, the capacity for global interaction, the excellent network linked to the project, and other crucial elements, aim to inspire urban design, architecture, parks, and facilities, along with state-of-the-art digital infrastructure.

This diverse and active population needed spaces that could enable fun, education, work, dwelling, and life. To accomplish this, a coherent local identity was established, where a community sensitive to the various stimuli could engage with public spaces, turning them into places of social interaction, meetings, and experimentation. At the same time,











One North was promoted by JTC Corporation and the Government of Singapore, and its general design was led by Zaha Hadid Architects. It is an innovation space for the fields of biotechnology, multimedia, and urban solutions.

everyone would still be connected to the rest of the world through intelligent information, knowledge, transportation, and business networks. One North was conceptualised as an experimental community, but its uniqueness and innovation elements extended far beyond the 200 hectares. One North's key to success was its deep interconnectivity with the global system present in Singapore: an efficient government, open economy, its education system, international connections, financial system, legal framework, intellectual property protection, quality of life, citizen security, and openness towards innovation. This broad ecosystem suggests an important competitive advantage for the development of the outstanding projects that are appearing in different cities around the world.

One North's urban design was created by Zaha Hadid Architects after winning an international competition. The project considered the existing reality and added an organic design based on parametric urban planning. Beyond its futuristic aesthetics, what makes the project relevant is its landscape imprint and its unique urban form, resulting from geometry adapting to functional elements. The project's axis is a winding linear central park connected to a system of nodal sub-centres, almost always accessible from the park, and known as Xchanges. Each Xchange has a specific profile and theme. These are places where the density of activities and exchange of ideas are concentrated. The internal public transportation system adapted to the urban design and is perfectly suited to Singapore's excellent integrated transportation system. One North is reminiscent of the structure of a European historic centre with low-scale organic streets and numerous nodes or meeting places, which are spaces to foster encounters and exchanges. Human interactions are formed in the physical space, and clearly, in the virtual space through its powerful digital infrastructure. Today, One North is a case study for similar projects developed in other parts of the world, including India and China.



## THE LIMITS OF THE TECHNOLOGICAL UTOPIA: MASDAR

Some urban projects appear different from the beginning. This is the case for Masdar, a project which began in 2008 in Abu Dhabi and Epcot, one of Florida's parks that was completed in 1982. However, these projects share some similar traits. Epcot (an acronym for Experimental Prototype Community of Tomorrow) was inspired by the leading futuristic utopia of its time, proposing a metaphor of power and technology, and introducing pioneering ecology references.[319] Masdar wants to be an example of technological innovation and urban sustainability for the world. In any case, the question remains: can technology alone solve the problems of the future city?

Masdar is not a theme park but, thanks to its ambition, a complex urban project pushing the limits of the technological utopia, expressed as such through very different forums of the urban international scene and innovative economic development. Masdar was established in 2006 as an 'ecological city' supported by renewable energy, especially solar.[320] The project was designed by Foster & Partners and is located on a 6 km² area on the edge of Abu Dhabi, beside the international airport. The project was created to house 45,000 residents, receive 45,000 daily commuters, and host around 1,000 companies. The creation of this technological city began symbolically with the Masdar Institute of Science and Technology and their initiation of the 'Masdar concept', which was destined for the development of urban solutions in energy and sustainability. Masdar's design and architecture were inspired by local cultural references, such as the monumental Sana'a in Yemen, a desert city with high and compact clay buildings that surround patios. The project's ventilation towers were inspired by vernacular Emirates architecture. The scope of the project and its commitment to sustainability were shaped by the application of new technologies under the Carbon Neutral City principles. The goal is to reach energy self-sufficiency through photovoltaic facilities, (including a large 10 MW solar plant that has already been built), complemented by wind towers and geothermal solutions. Other features include a desalination plant to manage the entire water cycle, the recycling of biological waste, a light train, a new system of internal mobility with small electric autonomous vehicles, and architecture that uses materials and passive solutions that adapt to the climate. With a budget of US$22 billion, the project has faced many challenges in its development. The quality of what has been planned, the institutional and entrepreneurial support given by the Emirates government, and the available resources, have all prevented a temporary

crisis and kept the project on track. However, the functional, economic and social models backing Masdar's long-term feasibility, including its motives to attract residents and talent, are still unclear.

Masdar is not a real city, nor a district with an entrepreneurial free-trade zone to promote the environmental industry, nor a truly self-sufficient structure. Masdar's self-sufficiency must be interpreted within the context of Abu Dhabi, a great city built between the sea and the desert, and a great consumer of imported goods with an economy still heavily linked to oil. However, like other built utopias, Masdar's ecological city is interesting as an experiment. Despite some temporary failures, such as its water cycle management (crucial for a desert city), some of the project's details stand out: shaded streets, including its main street; the main square planned with 30-meter solar umbrellas that open during the day; the wind towers and garden courtyard sequences; and large lattices. While the endless urban issues in Masdar provides useful examples, the on-going questions regarding the technological utopia reveal the dilemma of the digital society. One of the concerns refers to its centralised model that controls every detail, transcending energy efficiency goals, and perhaps transforming into a device for a surveillance society. We are not far from the society of automatons depicted in Fritz Lang's movie 'Metropolis'. There is also the question of whether the heterotopia examples given by philosopher Michel Foucault are cities: large military bases, great cruisers, the most perfect university campus, and a large theme park?

Since it was conceived, Masdar has become an example of a technological utopia requiring a complex and permanent refocus to adapt to new situations, driven by the same energy that has motivated the project until today. The integration of Masdar is essential for Abu Dhabi's economic diversification and urban innovation goals. The world might need these experiments that contribute to the outstanding effort of building (and re-building) future cities. Cities that can become urban solution labs and develop examples of leadership, governance, environmental quality, competitiveness, social integration, talent attraction, as well as an intelligent and sustainable use of technology, will enjoy a future of opportunities.

Masdar's main challenge will be to avoid early obsolescence. Its innovation ambition imposes great requirements, such as the system of solar panels, sea water desalination technology, and autonomous driverless electric cars, where each of these solutions may be surpassed by more advanced technologies. What is an outstanding example today may or may not be outdated tomorrow. In an increasingly dynamic world, future urban quality will depend on the potential for regeneration. In this context, it is essential to conceive urbanity as an open and adaptable innovation ecosystem capable of exceeding specific technological solutions applied to different urban elements. What would happen if Masdar were transformed into a living innovation lab for future urban solutions, which can transcend specific technologies applied at any time?

# 10 INTELLIGENT TERRITORIES

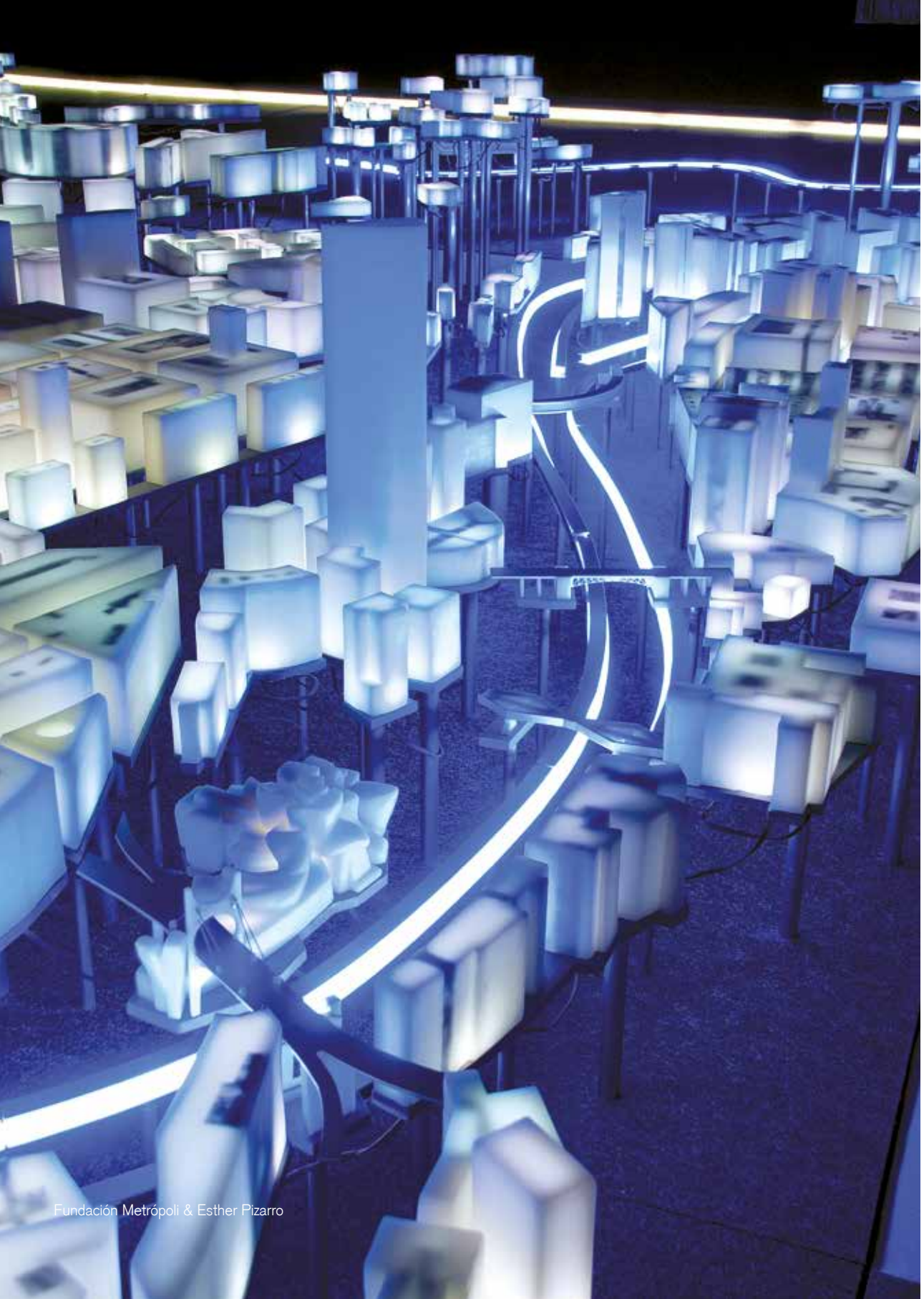
In this chapter, we analyse the urban tensions and territorial transformations affecting cities in the 21st century and the important differences between Europe, the United States, and large cities in emerging countries.

Territorial chaos and dispersion are the main threats to our cities, with urban sprawl seen as the greatest enemy of the sustainable city. In this chapter, we observe the growth of Edge Cities in Metrópolitan peripheries and territorial structures, also referred to by different names such as Exopolis, Metapolis, Diffuse City, and Generic City. Polycentrism in Europe and other regions of the world has appeared as an intelligent response to the disorderly sprawl of urban settlements throughout the territory.

The experience of Fundación Metrópoli, which initiated the CITIES project, offers a useful methodology to define city projects through their 'components of excellence' and 'innovative urban ecosystems'. These projects strive for an intelligent balance between economic strategy, social cohesion, and an active improvement of the environment, all within a framework of a coherent and functional territorial scale.

Cities of the 21st century — big, medium or small — must foster their identity and global connectivity. This is especially relevant today where cities need innovation and creativity to design their future.

# CITIES IN A GLOBAL WORLD
# A GAP IN THE GLOBALISATION: THE STRUGGLE AGAINST INEQUALITY
# NEW WAYS OF INHABITING THE TERRITORY IN THE 21ST CENTURY
# THE INFORMAL URBANISM OF BIG CITIES
# MEGACITIES, CITY SYSTEMS AND TERRITORIAL DIAMONDS
# INTELLIGENT TERRITORIES. DESIGNING THE CITIES OF TOMORROW
# EXCELLENCE COMPONENTS AND "INNOVATIVE URBAN ECOSYSTEMS"
# TOWARDS A CITY PROJECT



Fundación Metrópoli & Esther Pizarro

## CITIES IN A GLOBAL WORLD

Many decades ago, the development of technology and telecommunications – spearheaded by the Internet – led to the emergence of a radically new economic, political, and social communication order. This led to the progressive globalisation of many aspects of contemporary life. The gradual decrease in trade barriers, the creation of economic blocs, and the expansion of markets are its most obvious characteristics. Humankind has always tested its creative capacity against the limitations imposed by the environment. While the relationship between our societies and the environment has been altered, the technological revolution has also caused changes in the economic and social relationships within cities. We have already described some megatrends of this revolution: cloud computing, social media, and the proliferation of mobile devices. Big data, on the other hand, allows an immense amount of information from different sources to be processed. This new technological scenario will foster innovation on a global scale; thus providing opportunities for the creation of new services and companies at increasingly lower costs. We are arriving at a scenario where individuals and small companies will have the same access to computational capacity as large corporations. This dramatically alters the innovation ecosystems in cities. In this new economic context, cybersecurity has become a crucial component.

This new situation has been viewed both optimistically and pessimistically. While some focus on the new risks and problems caused by this revolution, others have more faith in the possibilities created by technological advancements.[321]

For many, these assessments have led to some uneasiness regarding the uncertainties of the future. Joseph Eugene Stiglitz, winner of the Nobel Prize in Economics, referred to this as "globalisation and its discontent".[322] This discontent stems from the increase in inequality, perceived as a result of the prevailing model of globalisation.

At the turn of the century, we witnessed deep and rapid urban transformations, which can be considered new episodes in the history of humanity, with the economy, politics, society, and the habitat we live in being crucially affected. This urbanisation process has been unprecedented, and some have talked about the notion of endless cities.[323] In developing countries, this large spatial transformation has corresponded to large demographic growth. In developed countries, it has also led to transformations in space use and

Supercities are places that harness the discovery of intelligent territories. They are our planet's nodes of urban innovation and creativity.

consumption. In 1950, almost 30% of the world's population was considered urban. By 2007, the percentage of the urban population reached 50% and it is predicted that around 70% of the world population will be urban by 2050. Demographic specialists also foresee that by 2025, there will be more than 30 mega-cities with over 8 million inhabitants, and more than 500 cities with over a million inhabitants. A change of such proportions presents exceptional social, infrastructure, and environmental challenges. Cities are becoming our generation's focal point. In countries such as Singapore, Japan, Spain, and Denmark, the Smart Cities movement or the economic sector for 'urban solutions' is perceived as an opportunity to share experiences and develop projects of significance.

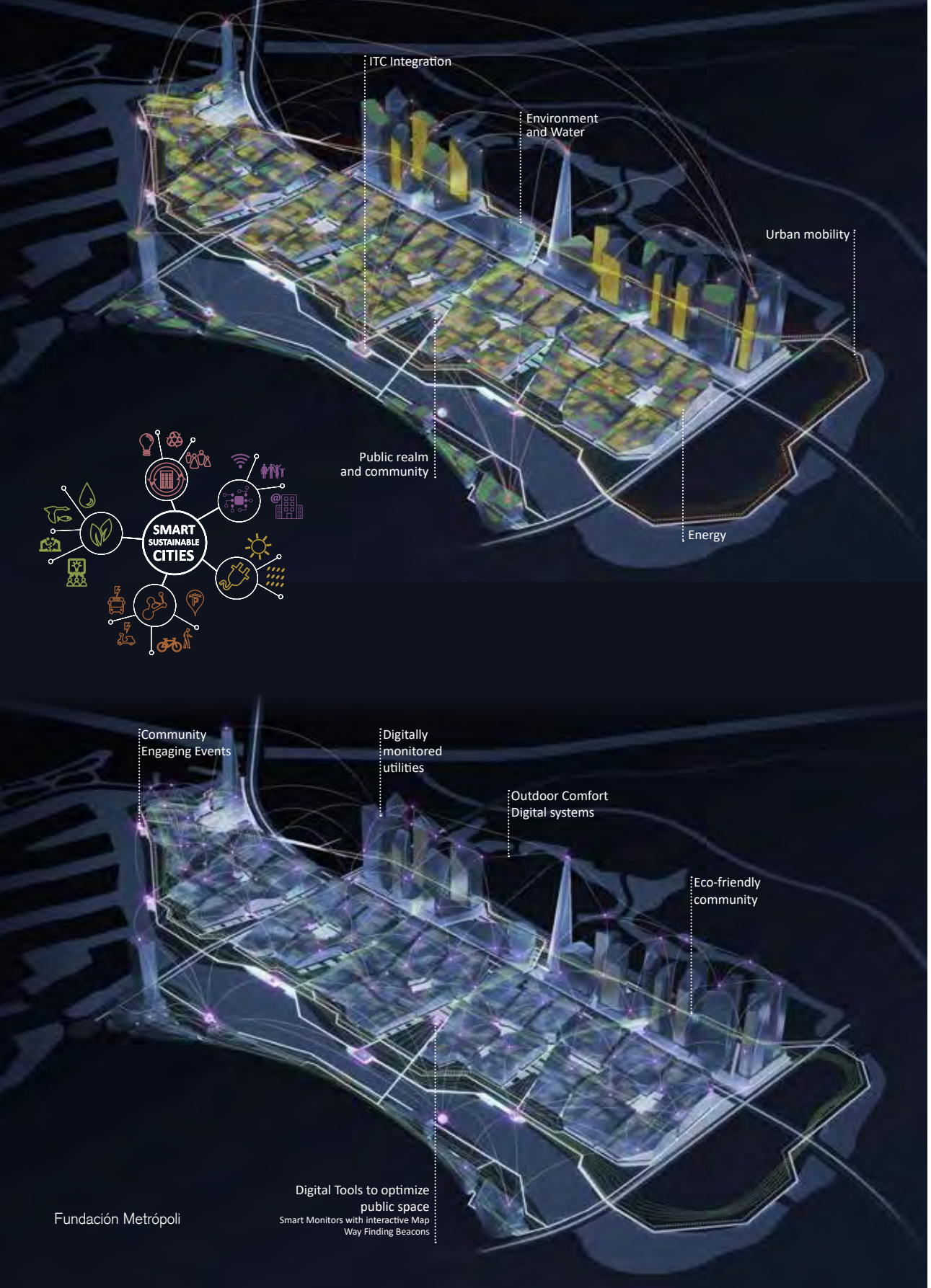
The city's increasing role in the international scene was not the only relevant phenomenon in the early 20th century. For the first time in history, most of the world's population live in cities. The world has never been so urban-centric; cities have become the key player in the global economy, hosting sophisticated clusters of the knowledge economy. They have also become the planet's main innovation nodes. As highlighted by Shanghai 2010's motto, 'Better Cities, Better Life', a high quality of life is dependent on cities. The UN-HABITAT's 2014 World Urban Forum held in Medellin articulated this as "equity as the essence for sustainable development." Both the new UN and EU Urban Agendas (Quito, 2016 & Pact of Amsterdam, 2016) demonstrate that to reorganise and improve cities is one of humanity's greatest challenges for the 21st century.

Around two decades ago, Saskia Sassen pointed out that "cities are exposed to global competition".[324] The increase in international transactions, easy access to information, and improvements in transport and communication, have strongly influenced the global role of cities. This affects states, who have seen their importance within the global economy decrease and, as such, have yielded power to transnational institutions and cities. In the global economy, there has been an increase in local demand for production, financial, legal, managerial, innovation, design, technology, and support services. A 'specialised service complex' has arisen in the main cities, particularly those with a critical mass. Such services are essential for the development and competitiveness of companies.

Many nations are too small to control the global flux of power, wealth, finance, and technology. At the same time, some nations are considered too big and heterogeneous to represent their socio-cultural diversity effectively. Compared to state bureaucracy, local powers tend to be better-equipped to represent citizens and their interests. As the global competition is no longer one between countries, cities and urban regions are in a privileged position to perform these functions in the future. Cities and regions with the capacity to provide business opportunities and a high quality of life also become part of this international competition. Today, most factors of production can be considered mobile – these include ideas, commodities, technology, capital, people, and businesses. In comparison, the elements that remain immovable are the location's identity, climate, landscape, and culture. Perhaps the most effective way of attaining competitive advantage in a globalised society is through urban and territorial policies.[325]

Cities will retain their competitive advantage so long as they continuously strengthen the infrastructures that support the activities of citizens and businesses. The need for well-equipped urban spaces with specific infrastructures to meet a city's initiatives should be supported by promotion agencies, adequate training, support programmes, and other facilities. At the same time, cities require strategic alliances and instruments for innovation. For this to occur, the broad context in which cities operate needs to be acknowledged, with a focus on their urban and territorial design. National governments often do not have the capacity to innovate and guide societies towards the increasingly open and competitive global environment, therefore cities must accept their new role and maximise their development potential. One could even say that the success and failure of countries will now be dependent on their cities. Institutions are increasingly focusing their economic development strategies on cities, as well as investing in the design and development of urban corridors and systems. Examples of such institutions include the World Bank, the Inter-American Development Bank and the Asian Development Bank, with The Santanderes Diamond project of Findeter, developed by Fundación Metrópoli and Microsoft, would be a prime example.

A city's ability to address its main issues such as economic competitiveness, social balance, quality of life, and environmental sustainability, will depend on its ability to reinvent itself. Ultimately, this hinges on the city's capability to innovate and collaborate with other cities in a globalised world.[326]




We are living through an unprecedented digital revolution, created by the confluence of four megatrends: cloud computing, mobile devices, social networks, and the combination of artificial intelligence and big data. Diamond City Hanoi.

## A GAP IN THE GLOBALISATION: THE STRUGGLE AGAINST INEQUALITY

Despite the increasing prominence of cities, the defining features of the urban landscape today do not only comprise skyscrapers, large shopping malls, upscale neighbourhoods, private country clubs, and state-of-the-art airports. It is also one of urban poverty. Within the inner cities, privileged areas are often seated alongside spaces of extreme poverty. It is a landscape of social segregation, where violence and insecurity have led to new barriers in the urban space. This takes the form of private security systems, gated communities, and conditioned shopping centres, thus generating intense internal pressure and rendering social cohesion unattainable. The new economic order created by globalisation has led to fractures between countries, cities, companies, and people. One cannot deny that globalisation provides new opportunities and is capable of generating a lot of wealth, however new redistribution mechanisms are required. The market economy, which is guided primarily by business opportunities, is unable to overcome this inequality by itself.

Issues on inequality and social imbalance are nothing new. A 1992 United Nations report revealed that the developed world – one-fifth of the world population – had amassed over 80% of world income. In his book 'Cities for a Small Planet', the architect Richard Rogers insisted that cities must find modes of production and distribution in the most socially fair, economically efficient, and environmentally sustainable manner possible. The solution to this is not merely technological. In the last few decades, many countries have tried to address inequality, extreme poverty, and develop a larger middle class. Education has become a decisive factor in the struggle against inequality. In this context, cities present a favourable scenario for the underprivileged by providing access to personal and professional advancements.

However, these technological advancements have also produced a digital divide, adding to the aforementioned social fracture.[327] This stems from the difficulty in accessing new technologies for large segments of the population, due to the education and expertise required. If new technologies are not available to all, they could reinforce inequality as they are essential for economic development. This inequality also extends to cities in the new knowledge society as cities can differ in the quality of their scientific education, the research of universities and companies, and in the access to modern communication infrastructures. Many cities in the least developed countries have

suffered as a result of this harsh reality. Those with a supply of cheap labour have received investments from large corporations seeking emerging markets, often supported by highly skilled experts. This has produced urban profiles like those in developed countries with modern buildings and skyscrapers. Their grand architecture, however, strongly contradicts with their still unstable urban reality. Large segments of the population have been excluded from such activities, leaving them marginalised and in poverty. With rural areas lacking job prospects, large cities tend to attract even more migration, although such moves often lead to unfulfilled expectations. In major cities around the world, high-income jobs are limited to the few, while the majority have to settle for subsistence-level employment.

Many authors have highlighted the inequalities of the global city, pointing out how the new economy has also generated new risks for social exclusion.[328] The first 'victim' of a segmented city is often its public space. As highlighted by Mike Davis' research on Los Angeles: "The universal and ineluctable consequence of this crusade to secure the city is the destruction of accessible public space [...] to reduce contact with the untouchables."[329]

This gap has been perpetuated between rich and poor countries, between those with access to the global economy and those remaining strictly in the local realm. It has also come into being in the interior of cities, provoking new spatial organisations, which includes segregation and exclusion processes, large inequalities in infrastructure, and the privatisation of spaces for security. All these affect urban planning, which was originally conceived to provide equity and balance in cities, as well as universal access to public systems.

The winner of the 1998 Nobel Prize for Economics, Amartya K. Sen, committed efforts to reinstate an ethical dimension to the discussion of economics' vital problems.[330] His research on poverty and hunger allowed him to consider inequality with a new perspective, thus discovering economic factors deeply rooted in cultural and social conditions. In fact, the increase in inequality is crucial to the debate of our society's future. On one hand, Sen and other like-minded thinkers reflect on the nature of poverty within a wealthy society, highlighting that the most important factor is not how much wealth there is, but how it is distributed.[331] On the other hand, there is concern over the formation of a society shaped by individualism and the weakening of social relationships. Robert Putnam has demonstrated this by emphasizing the decline of 'social capital' in contemporary society. Meanwhile, Rifkin stressed that society advances due to a complex web of relationships, which act as a constructive force.[332] Although this might be wishful thinking, the potential of social networks (unattended by Putnam) is indisputable in creating bonds and co-operation in society.

In this context, the ability of a society to envision its own future is all the more important. Urban policy and urban planning can lead to very positive results in social integration, allowing all citizens equal access to infrastructure and enjoyment of the city.

## NEW WAYS OF INHABITING THE TERRITORY IN THE 21ST CENTURY

The most relevant urban phenomenon of the early 21st century was the birth of urban structures on a regional scale, as well as its previously unknown complexity. As we have seen, some authors have described this phenomenon as 'territorial metropolitanization'.[333] Tensions regarding land use has led to the use of urban settlements as intervention strategies in different areas of the world.

In Europe and other developed countries, there has been a weakening of the centrifugal forces in agglomeration economies that previously produced first-generation industries and services, accompanied by dense and compact cites with housing and productive activities confined within set spatial enclosures. Centrifugal forces have come into being, taking many urban activities outside the city's traditional boundaries. Industrial activities, office parks, logistic activities, mid and low-density housing, different commercial typologies, universities, and leisure activities have been spread out over an increasingly broad territory. This has led to congestion, thereby affecting land value, as well as leading to a new assessment of nature and the rural environment. The new spaces of metropolitan environments are less dense and more diffused, requiring physical and telematic connections. This has resulted in notions such as the open city, disperse city, diffuse city, and city without borders. At the same time, the city centre is being recovered with non-residential activities and new commercial typologies, causing the influx of skilled labour, urban regeneration, and the formation of new centralities. Opportunities have been found in spaces vacated due to economic reconversion, such as obsolete industrial areas, old infrastructures, ports, railway facilities, and military camps.

Therefore, the polycentric approach gained momentum in Europe. This was a response that tied traditional settlements to new opportunities and countered the global process of disorderly and scattered urban development. For example, Europe is developing a high-speed rail to connect medium-sized cities to achieve an integrated and united system of cities. Consequently, medium-sized cities

will be able to strengthen their urban profiles and be competitive in the global context. This also helps tackle issues in economic inequality and environmental sustainability. Balanced city systems, with strong urban identities, and diverse and complementary nodes, can become the 21st century response to organising cities and territories. In other regions of the world – particularly Asia, Latin America, and Africa – the focus is on the development of mega-cities. This has led to many issues in territorial governments and inequality.

Imbalances between the inner city, the first marginal rings, and richer suburbs, have become common in the United States. The suburbs are also becoming the main site for labour. In 1970, only 25% of labour was located in the suburbs. Today, more than 60% of labour is in city-region areas. Corporation headquarters have settled in the suburbs, in the same way large shopping malls and leisure centres once did. Diffused residential growth, common in American cities, has occurred simultaneously with the outburst of new economic activities. This has led to the loss of vitality and the appeal of inner cities. As we have already pointed out, one of the main challenges faced by American cities in the past decades was the regeneration of the inner city. This stemmed from an inability to control urban growth within reasonable physical boundaries. Urban sprawl generates traffic problems, physical isolation, lack of social cohesion, the destruction of natural spaces and valuable rural areas, as well as excessive energy consumption. Two examples can illustrate the severity of this process in North America: demographic growth in New York's Metropolitan Area in the last 25 years was 5%, but its urbanised area grew by 60% in the last 50 years, whilst Los Angeles' urban region multiplied its population by four, while the urbanised surface is multiplied by 20.

Urban sprawl has been described as the great enemy of the sustainable city. However, several studies have already considered that "suburbia is more than a collection of residential buildings; it expresses values so deeply embedded in bourgeois culture that it might also be called the bourgeois utopia".[334] The principles and lifestyles of contemporary society are mixed up in the residential suburb. In order to regenerate the city, it is necessary to regenerate the suburb.[335] In his classic work, Robert Fishman explained the large-scale creation of residential suburbs, from their Victorian origins and roots in the 'countryside style of life', up to the creation of the first suburban metropolis, Los Angeles, which was based on cars and imposed social segregation. The post-war suburban model relied on the construction of highways and the ideal of owning a small house with a garden. This was complicated by the development of the shopping mall towards the end of the 1950s, which coincided with the first decline of North American urban centres, despite their urban renewal policies. This decline of the spaces surrounding the downtown was gradually exacerbated by the increase of derelict spaces (such as railway facilities, port, industry, and brownfield sites), as well as the deterioration of areas inaccessible via motorways. Large corporations were the first ones to spot the opportunities of the periphery, creating shopping malls at the accessible edges of the consolidated city. Fishman's 'Technoburb' preceded Joel Garreau's concept of the 'Edge City', assessing the phenomenon of corporation and tech industry headquarters spreading along strategic communication routes. Urban centrality was completely altered by this phenomenon, and so were land consumption patterns. The ability to accumulate buildings on a transformed rural environment, merging typologies, functions, and activities, also remains crucial in Europe. The real estate sector and large distribution companies have sparked new consumption habits by linking shopping and leisure. They have dictated lifestyles and employment patterns in an increasingly dynamic society, encouraging allocation principles that are incompatible with the compact city.

Nevertheless, there is more than one suburban pattern – urban sprawl happens in different ways and in different contexts. This is what journalist Joel Garreau proposed in 'Edge City: Life On the New Frontier', noting the replacement of downtown functions with more complex peripheries that had outstanding centrality and accessible areas, thus facilitating the creation of complex polycentric or constellation urban systems. "Today, we have moved our means of creating wealth, the essence of urbanism – our jobs – out to where most of us have lived and shopped for two generations. This has led to the rise of the Edge City".[336] Although these are not cities, they are perceived by the population as such, even if they do not possess a city hall, police force, or firefighters. These are places with more offices than dwellings, alongside large shopping malls and leisure centres.

Garreau identified the early prototype 'Edge Cities' as those emerging in Silicon Valley around, San Jose or Palo Alto, or the surroundings of Route 128 in Boston's metropolitan area, where the ICT industry had concentrated. Others have depended directly on corporate strategies, such as Schaumburg, located close to the Chicago O'Hare International Airport. Its transformation can be traced to the decision of Sears' executives to leave their downtown premises and relocate their headquarters beside the airport, becoming the first catalyst of change in the area. A similar urban pattern can be observed around New

York, whether in Newark or Long Island; Atlanta's Perimeter Centre, a true city north of the ring road; or Irvine in Orange County, among so many others in the Los Angeles Metropolitan Area. It is obvious that the original functions of the downtown, namely businesses services, public administration, shopping, and transportation, have been deeply altered by the development of new centralities.

We face numerous urban phenomena which do not respond to a single logic. Urbanist Edward William Soja described this in what he called Exópolis.[337] Urban fabric is redirected towards a polycentric model that is fragmented and discontinuous; a city-region with a varied and shifting exchange of functions between its inner and outer cities. Within the European context, urban planner Francois Ascher developed an open interpretation of the most recent suburbanisation processes in large urbanised areas, especially in France: "...a new urban form emerges, what we have called 'metapolis', because it seems to leave behind and encompass from different points of view, the metropolis we know so far".[338] Metapolis refers to new, heterogeneous, and polycentric urban regions, which have evolved over ever-changing conurbation systems. These spaces are difficult to recognise except for those who live in the city, since they constitute a certain unity of habitation and activity. We also cannot speak only of periphery or urban sprawl. There is a system of social and economic relationships that has become the substratum of a new urban reality, independent of the municipality and other administrative boundaries. Metapolis includes numerous spaces, but defines only one 'basin of life and labour', a concept that distorts conventional activity in the territory. With the evolution of the French countryside (the bocage), spaces, such as Lombard, Flemish, and Basque, were invaded by the urban fabric and became areas that were not exclusively identifiable with a certain city or municipal boundary. However, as with other 'Edge Cities', those living there will know how to identify it.

This current urban settlement model has been described by some Italian experts as the 'Diffuse City' (città diffusa), which is relatively independent of large cities. The uniqueness of the North Italian example is its relationship with the 'industrial district', specifically the configuration of a 'rural-urban' area that combines rural and industrial activities. This has been evident since the end of the 1970s, overlapping with a territory defined by a rich network of large and small cities.[339] The Diffuse City concept refers to territories where great economic activity has been organised over the road network. The multitude of workshops and small factories have been intertwined with housing and services. Some obvious examples include Véneto, Emilia-Romagna, and Lombardy; although this concept is also applicable to other European regions such as Ruhr, Flanders, and the Rhône; or even areas of Catalonia, Basque Country, and Valencia. They demonstrate how the rural (or rather, what is left of the rural in a sprawling urban area) and the urban overlap, altering the settlement and subdivision system. It is a distinguishable post-suburban model based in polynuclear regions with great interaction, supported by traditional infrastructures and new networks. This extreme dispersion between residence and work, with spontaneously associated services, can be construed as a unique chaos. However, many productive and heavily industrialised cities display this trait, from Parma to the Reggio Emilia along the Po River.

With the appearance of these complex regional patterns of urbanisation, the control of sprawl and understanding the shape of urban growth have become predominant issues. The sustainability of the urban centre renaissance is also a concern.

The challenge lies in what Dutch architect Rem Koolhaas astutely described as the 'generic city': the contemporary multiform and complex city that tends to be (or be interpreted as) universal and surprisingly homogeneous. Has the contemporary city been reduced to resemble an airport? Koolhaas remains faithful to the architect's aversion towards the periphery or the suburb. He posits that great architecture can solve urban problems, while simultaneously praising the complex periphery. If we refer to the homogeneity of buildings spotted in new suburbs (without considering the local culture), contemporary cities can all be considered very similar, whether Paris or Atlanta. Universal principles of a generic city would be supported by the sensation of speed, the triumph of the artefact, and the changing city strength, celebrating the existing urbanity without any concern for the sustainability of cities. Koolhaas combines provocative impressions in a delirium of urban chaos, understanding architecture itself as a chaotic adventure and as a tool to create new possibilities.[340] Precedents of this perception are present in his competition entry for Melun Sénart, as well as in his idea of phases and interphases. Koolhaas does not talk about an ideal city, but about the real city, of its fragments displayed in a world theatre with a socially selected cast. Perhaps in no other moment in history has there been such urban tensions derived from the transformations taking place in cities around the world.

## THE INFORMAL URBANISM OF BIG CITIES

One of the most singular expressions of contemporary urbanism is the immense self-built structures in the large cities of developing countries. In the next 25 years, an additional two billion people will live in cities. Most of this growth will be linked to developments in the cities of emerging countries.

Africa, Asia, and Latin America are the regions of the world with the highest demographic growth. These regions continue to experience a huge influx of people moving from the countryside to the cities, in many cases without having the prerequisite capacity for housing and basic urban services. As a result of exclusion and inequity, informal settlements have emerged in urban voids and peripheries, many of which are illegal.[341] Development has happened so rapidly that it has become impossible for local governments to provide basic urban services. London, by far the largest city in the world at the beginning of the 20th century, took 130 years to grow from one million to 8 million inhabitants – Mexico City took only 30, from 1940 to 1970, for a similar level of growth. It took Mexico City only a further 16 years to double that population. This is only one example of the explosive metropolitan growth experienced by some cities around the world.

It is enlightening to observe that the different names given to self-built dwellings in Latin America are often related to social groupings such as convent, barracks, ranch, corral, and so on. We find new neighbourhoods sprouting both on the city's edge or in publicly-owned derelict spaces. This includes areas usually unfit for construction such as ravines or hills, as well as developments in the inner city, such as substandard housing in historic centres. In the first example they are called *favelas, repartos, ranchos,*[342] *villas miseria, mocambos,* pirate neighbourhoods, and marginal settlements. When they appear inside the historic city, they are referred to as *corralitos, vecindades, inquilinatos, conventillos, ciudadelas,* and *cuarterías*.

We should not underestimate what people have done for themselves – in many cases, there is a real effort of social construction in self-built settlements. Many groups have organised structures in these neighbourhoods to support their lifestyles. Often enough, those living in the informal city are employed and work in the formal city. However, it is their meagre income that forces them to modify their houses slowly and adapt them to the spatial needs of a large family in a subsistence economy. What British social psychologist John Turner argued is still useful today: "I believe the common mistake is in the quantitative assessment of housing construction, in terms of objective appearance, which is a non-realistic point of view; instead, the value of a house, or rather, of the inhabitable environment, lies in its response capacity to the vital situation of the person within the family or local community. In other words, the reality of dwelling space lies on its attributes, in how they are perceived and experimented, and not their qualities or material shape".[343]

This self-organising capacity does not only apply to housing issues. Let's consider metropolitan transportation and shopping: without transportation via small vans, along so-called concessionary routes (such as the Mexican peseros or busetas in other countries) and without their capillary structure, it would be impossible to access remote areas of the city. Without this transportation, life in informal settlements would be impossible, and not only in major cities such as Mexico City or Sao Paulo. Another issue is commercial activities on streets – street vendors or tianguis that provide consumer goods to millions of citizens constitute a main element of the informal economy. Regularising public transportation, incorporating street markets into the official economy, or improving infrastructure in self-built neighbourhoods, will not be possible without including the individuals involved in such activities. A profound understanding of city life in each distinctive case is required.[344]

In the informal city, there are very fragile social groups. Organisational incapacity, fatalism, or hopelessness, characterise the lives of those in the most vulnerable social positions. Although it is possible to recognise positive efforts of self-organisation and collaboration in informal settlements throughout the world, there always remains the social weakness, which anthropologist Oscar Lewis referred to as the 'Culture of Poverty'.[345]

In fact, one of the most problematic elements of sustainable design is its social dimension, which is closely linked to equity. This varies according to each context, thus overcoming poverty is one of the greatest obstacles in achieving sustainable development. It is difficult to be concerned about sustainability when survival is the priority – "greater social equity for both moral and practical reasons is becoming a key issue in achieving sustainable development in both the developed and developing countries".[346]

This is where a new urban policy, independent of simple liberalism, can achieve a relevant role. A powerful urban policy can improve the competitiveness of economic activities in the city. As the examples of Medellin, Lima, Cape Town and Bombay have demonstrated, positive results in social integration and cultural development can also be achieved.

The Favela-Bairro programme, started in Rio de Janeiro and funded by the Inter-American Development Bank, is another relevant example. This program is similar to other programmes developed in many Latin American cities and was spread over 15 areas, involving 90 communities and 250,000 people. It established a complete shift in the way Favelas are perceived in Rio. The main goal was to integrate the formal and informal parts of the city. The programme regularised land and housing ownership, providing each area with basic infrastructure, services, and facilities in a co-ordinated manner. The programme was developed jointly with the community; the early results were optimistic, not only for the physical improvement of the neighbourhoods, but also for paving the way towards a more balanced society.

Seemingly simple actions in a marginal neighbourhood can have extraordinary consequences, especially actions on public spaces.[347] Fundación Metrópoli proposed one such strategy for Katutura, the poorest neighbourhood in Windhoek, the capital of Namibia. Home to 250,000 inhabitants, 'Katutura' translates to 'a place where no one wants to live'. It is a self-built neighbourhood of reused aluminium corrugated sheets with a young population. Art was the first step in creating a tourist destination for the one million tourists arriving every year at Windhoek's nearby airport. This urban project, named Art in Katutura, involved the neighbourhood community painting the façades of their homes with colours previously selected by artists. The initiative was backed by a rich local tradition involving colour and popular art; employing simple mechanisms of urban syntaxes, music, dance, theatre, and crafts. It has turned the neighbourhood into a living museum, building self-esteem and generating optimism amongst the neighbourhood. There are analogous experiences in Asian and Latin American cities where creative intervention has been done with few resources, yet with strong citizen participation. In many cases, there has been real improvement in the neighbourhood, especially in strengthening its identity and sense of belonging, which is essential for future improvements.

We must also highlight Curitiba and Medellin's experiences in social urbanism. Urban issues have been addressed with the creation of new urban spaces, construction of facilities, and the establishment of social housing programmes. New accessibility to spaces and services in Medellin is transforming some of the most dangerous neighbourhoods in the city into references for community life – a hugely creative effort that has impacted the informal city.



## MEGACITIES, CITY SYSTEMS AND TERRITORIAL DIAMONDS

The most surprising aspect about urban change around the world continues to be its speed and scale. In 2010, there were 442 urban regions with over one million inhabitants. By 2020, the number will be 538.[348] Demography, however, is inadequate in describing a phenomenon that has greatly affected the urban makeup. This phenomenon, which is capable of overcoming state boundaries, needs to be interpreted using new tools.

The origin of this phenomenon can be traced to the 'Megalopolis' concept coined by geographer Jean Gottmann in 1961 to interpret the great urbanised continuum of the United States East Coast. This concept, however, must be revised in the face of the complex and spectacular changes that have occurred in the last few decades.[349] In 2010, there were 21 urban agglomerations with over 10 million inhabitants, most of them in developing countries, and the number is growing. The dynamism of these areas has generated regional changes, leading to the transformation of the broader territory, including in other cities of varying sizes. In megalopolises such as Tokyo, Mexico City, Cairo, and Mumbai, despite having metropolitan spaces contained within the wider geography of their states, they overflow administrative borders and spread their influence across the territory. They connect to other cities in the linear manner described by city planner Constantinos Doxiadis' 'Ecumenopolis'.[350] In fact, regional analysis has become increasingly dependent on the agglomeration phenomena, which is difficult to quantify.

In the most dynamic areas of the world, and parallel to the development of these megacities, urban expansion is providing opportunities for regional scale integration. New urban territories have surpassed traditional political and administrative limits. We refer to these highly important urban regions in the world economy as Diamonds. These polycentric regions originated from the spatial expansion of metropolitan areas located in close vicinity, leading to improvements in physical and digital connectivity, as well as the gradual integration of the labour market.

The strength of these emerging territories lies in their greater demographic and economic scales. Strategic agreements between cities and associated territories also allows them to achieve greater global visibility and further collaborations with international markets. Research by UN-Habitat has revealed that the 40 largest urban agglomerations occupy a tiny fraction of the earth's inhabitable surface, but host at least 18% of the world's population, 66% of

the planet's economic activity, and around 85% of scientific and technological innovations.

Territorial Diamonds are defined by their important economies of agglomeration, linked to the concentration of advanced tertiary functions, global communication infrastructures, as well as training and knowledge centres. They integrate polycentric urban systems, metropolitan areas, medium and small cities, as well as rural systems to constitute a territory capable of hosting an array of complementary activities. The Diamond's nodes of special urban intensity are crucial to the allocation of the most advanced economic sectors. These areas can boost connectivity and regional relationships, promote territorial balance strategies, and counter poverty.

A Territorial Diamond presents a wide variety of opportunities to expand economic development and increase the dimension of regional productive clusters. It also generates new sectorial and territorial interactions and fosters integrated economic, social, and environmental strategies. To define the future of these Territorial Diamonds, we need complex inter-institutional participation and collaboration strategies that cross traditional political and administrative boundaries. It is important to define an integrated global vision and strategic projects that can catalyse change. The improvement of physical and digital connectivity is essential to develop these territories.

This effort to seek strategic complementarity has provided these territories with a new dimension. New transportation networks, airports, regional transit systems, and logistic platforms have improved mobility and strengthened economic links among the different activity nodes. This has created a networked urban structure that can benefit from a new generation of digital platforms. Cities, as we have repeatedly pointed out, are the activation node for the territory's economic and social activities. In order to be relevant in a global society, the cities of the future will have to be organised in such polycentric structures of synergistic and complementary nodes.

We present some examples of the research developed by Fundación Metrópoli to discover urban regions with the potential to become Diamonds or Territorial Diamonds. The territorial scale has been altered by the physical connectivity provided by high-speed railway technology. Whether it is the Mediterranean Diamond (Madrid, Barcelona and Valencia), or the Malacca Straits Diagonal (Singapore, Kuala Lumpur and Penang), the approximate distance of two and a half hours of high-speed rail travel provides these territories with great potential to transform into important nodes in the world economy.



**Urban America 2050**. Ten emerging mega-regions have been identified within the United States for this initiative. America's mega-regions are composed of the city centres, suburban areas, and hinterlands, into which several cities have grown with significant intensity. They have become North America's economic engine. The Northeast Corridor from Boston to Washington, integrating New York City and Philadelphia. Cascadia, stretching from Portland to Vancouver through Seattle. Northern California, including San Francisco's Bay Area, Sacramento, Reno, and Fresno. Southern California, including the broad urban area from Tijuana, San Diego, Los Angeles, and up to Las Vegas. The Arizona Sun Corridor, including Phoenix and Tucson to Nogales in Mexico. The Texas Triangle, with Houston, Dallas, Fort Worth and San Antonio. The Gulf Coast, extending from the McAllen-Reynosa and Brownsville-Matamoros frontier spaces to New Orleans and Pensacola. Florida, encompassing the peninsula's large city network. Piedmont Atlantic around the city of Atlanta. And finally, the Great Lakes region, with a large developed area south of Lake Michigan and Lake Huron. 'America 2050' is based on research developed by the University of Pennsylvania and New York's Regional Plan Association, in collaboration with Fundación Metrópoli. It is backed by the United States government, in order to respond to the great challenges of competitiveness and quality of life emerging at this new territorial scale. Rather than describing existing reality, this initiative is aimed at identifying opportunities and establishing integrated action strategies, particularly in transportation, environmental risk control, competitiveness, and quality of life. Sustainable development and competitiveness are being deliberated in the long-term, with a focus on implementing innovative urban policies, new investment schemes encouraging infrastructure development, strengthening economic links, improving environmental systems, as well as providing urban and territorial strategic visions suited to this territorial scale.

**The European Diagonal**. Europe is identified by its structure of consolidated medium-sized cities, excellent infrastructure, and high-levels of well-being. It has established polycentrism in a context that has surpassed historic boundaries, with new urban development processes reconfiguring the territory's functionality in many regions. One of the most strategic spaces identified is the Mediterranean Diamond, located in the north-eastern quadrant of the Iberian Peninsula. It represents the economic, cultural, and political engines of Spain and Southern Europe. This area encompasses four out of the five major Spanish cities (Madrid, Barcelona, Valencia, and Zaragoza). It is home to 15 million people, more than one-third of the country's population and two-thirds of its economic

production. Major investments in transportation systems, particularly in high-speed railways, have led to an increase in connectivity among cities. The cities were previously connected by air and through highways, but the high-speed railways have eased the movements of people and goods tremendously. The Mediterranean Diamond is increasingly integrating other regional-scale areas such as the Lisbon-Porto axis in the West, and the Lyon-Marseille axis towards the East, thus reaching Northern Italy's dense urban spaces that surround Milan. We can thus identify a European Diagonal in a space of over 135 million people and within a four-hour isochrone, led by Lisbon, Madrid, Barcelona, Marseille, and Milan. The Diagonal emerges from the research undertaken by Fundación Metrópoli and the University of Pennsylvania, along with the corresponding local and regional governments.[352]

**The Malacca Straits Diagonal**. Some territories are encouraging specific policies to take advantage of territorial opportunities and carry out development projects on a global scale. This is true for the Malacca Straits Diagonal. The initiative will connect a population of over 16 million along the western coast of the Malaysian Peninsula from Singapore to Penang, including the metropolitan areas of Iskandar and Kuala Lumpur. The Straits of Malacca, between this western coast and the nearby island of Sumatra, make up a strategic corridor with the highest maritime traffic in the world. Its connection has been planned through a high-speed train route connecting cities, ports, and airports. There is also the possibility of developing northwards, stretching towards the southern regions of Thailand. The Diagonal is a key element in Singapore's role as an advanced service centre, for the positioning of Kuala Lumpur as a high-technology node, and the development of tourism in the region. It will also strengthen relationships with emerging areas around the Bengal Bay, Thailand, and Southern China. This space is an example of territorial synergy between two competing nations.

**Territorial Diamonds.** The Territorial Diamond concept does not only describe a geographical reality, but also the potential of certain territories to accomplish relevant improvements by working together. The broad territorial context of the Diamond is key to identifying its future potential. As has been pointed out, the Diamond is a metaphor of what can be achieved in a territory made up by points, lines, and surfaces representing cities; combined with the connection between them and their environmental systems. To polish a diamond entails improving its cities, strengthening its connections and recovering its environmental ecosystems. The 'Digital Diamond' concept is being developed by Fundación Metrópoli and Microsoft to explore synergies between physical design and digital platforms. As already pointed out, we are developing a pilot action of this concept with Findeter, Colombia's Development Bank, in addition to the direct participation of the national government and the governors of the involved departments. The project is named the 'Colombia's Caribbean and Santanderes Diamond'. It involves different administration levels, as well as forums for civil society leaders and institutions.

A Digital Diamond requires a strong partnership to combine the work of the territory's key players and find symbiosis between urban intelligence and digital technology. Designing a Territorial Diamond requires creative leadership to formulate an intelligent and shared vision, identify a selected group of projects backed by the strengths of the territory, discover emerging economic clusters, and select international strategic allies. From a digital point of view, it requires basic infrastructure including broadband connectivity, cloud services, access to big data for the different actors, education and digital cultural support; and the creation of an innovation ecosystem capable of generating employment for the Diamond.

A Diamond project involves pushing economic development and accelerating competitiveness. This is largely dependent on the convergence of the different levels of public administration, sectorial policies, the public and private sectors, as well as national and international actors.

## INTELLIGENT TERRITORIES: DESIGNING THE CITIES OF TOMORROW

The CITIES Project originated at the University of Pennsylvania in 1998, as a global research project involving 20 innovative cities in five continents. It was directed by Fundación Metrópoli, in collaboration with an international network of cities, universities, and research centres. The cities selected in the first phase of the research were predominantly medium-sized cities on the global scale, with an open attitude towards co-operation with other cities around the world. They belong to countries with different levels of development, cultures, and political and social organisations. The cities include Toronto, Boston, Philadelphia, Miami, Monterrey, Medellin, Curitiba, Montevideo, Santiago, Dublin, Bilbao, Windhoek, Cape Town, Dakar, Riyadh, Dubai, Hong Kong, Shanghai, Cebu, Singapore, and Sydney. Municipal groups and universities in these cities have participated since the earliest stages of the project. The project has since evolved into the 'Cities Lab', a permanent research lab continuing its activities in cities such as Moscow, Mexico City, Casablanca, and Yokohama. It also conducts

work on new polycentric territories such as Urban America 2050, the European Diagonal, the Malacca Straits Diagonal, the Caribbean and Santanderes Diamond of Colombia, and Euskal Hiría.[353] The Cities Lab has adopted a holistic and multi-disciplinary approach, with special attention given to the intersection between art, technology, and design from the architectural to the territorial scales.

At the start, a methodology was designed to identify the strengths of each city. This involved the mapping of critical issues, indicators, visions, and attitudes, with local leaders. The process has also included relational accessibility analysis, as well as assessing the international context and other aspects that define urban profiles. This has enabled analysis on the main urban innovations taking place in each of the cities, establishing the crucial factors for strategic projects.

Based on this research, we have defined Intelligent Territories as those capable of striking a balance between economic competitiveness, social cohesion, development, as well as cultural and environmental sustainability. We have learned from the experience of these cities and territories, particularly in the way they operate to achieve positive results. None of the identified innovations or projects can be directly translated to another city or context, but function as useful references. The main traits identified in the Intelligent Territories include the following:

**Intelligent Territories are designed by the community.** Market forces are useful instruments in stimulating the economy, corporate creativity, and productivity. However, the market itself is not an efficient instrument to organise the city. Placing the physical organisation of the city in the invisible hands of supply and demand will not generate satisfactory results. Intelligent territories cannot be produced by isolated initiatives of different economic actors. Therefore, urban design must be directed by society and its institutions. Intelligent cities and territories design their future through citizen participation and processes that ensure innovation. Successful examples are often those with strong leadership, a mature civil society, and clear inter-institutional cohesion. Coherence and continuity in political leadership can also be a strong competitive advantage. In some cities, the lack of political leadership has been compensated by civil society through foundations, NGOs, and volunteers. This is common for cities in the United States, where the third sector is particularly strong. In other cases, the business community plays an important role beyond their direct interests. In this sense, creative political leadership in democratic societies constitute a clear advantage. Inter-institutional collaborations have enabled projects that would be impossible in an uncooperative environment without common goals. Citizen participation can be encouraged through new technologies, thus enabling information sharing when addressing urban issues. In short, Intelligent Territories are those with active communities capable of organising their future.

**Environmental awareness and climate change responsibility.** Intelligent Territories have developed a new engagement with the natural and urban environment. Conventional administrative divisions are often not suitable for tackling environmental issues, hence new working scales at regional and intermediate levels must be sought. Intelligent Territories aim to make the regional or urban model compatible with the distinctiveness of the physical environment, thus controlling negative impacts, and considering the local constraints. At the same time, Intelligent Territories embrace an active stance by making positive interventions to the environment. This is achieved by active protection, territorial reassessment, regeneration of natural ecosystems, and the regeneration of degraded urban areas. The examples analysed by the CITIES Project display how efforts on the local environment affect not only the population's quality of life, but also become a factor in attracting economic activity. When the city's environmental system is conceived with equity in mind, it can also contribute to social cohesion. Investing in the landscape and environment of cities can provide great economic benefits and social impact. Meanwhile, architecture and urban design can also contribute to this objective, especially through the city's public spaces and green infrastructure. Over the past few years, many innovative cities have laid out goals on reducing energy consumption through new transportation systems and the use of renewable energy. As seen in the case of Copenhagen and Malmö, such efforts can also create a green economy that contributes to economic development.

**Ability to create competitive advantage.** Cities and territories are in a unique position in this interconnected and complex world. Certain competitive advantages in economic, housing, leisure, culture, and social interaction activities could come to the forefront to highlight each city's distinctiveness. Several examples in research demonstrate how a good urban plan could improve the city's competitiveness in this sense. Cities are not only attractive due to their inherent attributes, but also because of their future projects. Today, the most important challenge for cities is to educate and attract human resources. Key components of this race will include professional opportunities, connectivity, educational infrastructure, an innovative environment, housing options, quality of life, social balance, public security, cultural and leisure attractions, and the quality of urban spaces. Local and regional governments can contribute to this

by providing activities and enhancing the competitiveness of companies. In short, Intelligent Territories are able to promote selected projects, rooted in local singularities that will lead to the emergence of economic clusters that are in line with the new global economy. During the industrial era, factories were the production spaces and it was important to provide industrial infrastructures at low cost. In the 21st century, where the knowledge economy reigns, cities represent innovation nodes where new ideas, products, and services are created. Intelligent territories focus on urban policies that establish vibrant cities with spatial quality, as this will be crucial to accomplish this goal.

**Commitment to cohesion and social development.** Intelligent Territories have sought to achieve social cohesion and balance in the face of socio-economic inequality. Significant efforts have been devoted to urban regeneration in order to improve liveability, environmental quality, and public spaces. Intelligent Territories aim to limit the voluntary exclusion of the elites and create a more inclusive society. Public spaces are one of the main reference points for a city's community life, since their quality and usage provide a measure of social equality. Efforts to achieve a socially-integrated city cannot be achieved solely by public authorities. As a result, dynamism and commitment from civil society are essential in producing an inclusive city. Research has shown that social inclusion has a clear influence on a city's attractiveness for economic development. Intelligent Territories also aim to encourage a sense of belonging and strengthen identity, as they can contribute to collective projects. They encourage the democratisation of urban planning by using participatory processes as a mechanism against social exclusion. As pointed out in various parts of this book, Medellin's success in creating public spaces and accessible facilities in marginal neighbourhoods has been remarkable. Another key factor for social integration in cities is an affordable and efficient public transportation system. New technologies also contribute to social cohesion as they facilitate access to information and services.

**Coherent territorial government structures.** Major changes have occurred around the world in the past decades. New political blocs have emerged, commercial alliances are being established, state functions are being reorganised between different government levels, while regions and cities have emerged as key components of the global economy. Nevertheless, in certain examples, the organisation of local entities has led to political and administrative fragmentation. At the same time, innovative territories are testing the new formulae of political and administrative organisation. In this context, government and territorial organisations have become increasingly complex. There is a risk of fragmentation for territories with inappropriate administrative and political structures. Singapore's successful urban transformation and economic development process in the last 50 years is well-known. The city-state structure has facilitated the decision-making process and continuity. In some municipalities, mayors can only serve for three or four years, which undermines any long-term project. This is commonly seen in parts of Latin America. Intelligent Territories can provide an efficient administrative and political structure through inter-institutional collaboration. They are also capable of creating the required level of authority to fulfil specific goals by weaving together the 'social architecture' required for strategic projects. For example, the Bilbao Ria 2000 initiative – a partnership involving the Spanish Government, the Basque Government, Bizkaia (Biscay) Council, and Bilbao's City Council. Spanning two decades, this initiative has led to remarkable urban transformation. Cities such as Toronto have developed administrative and political reform processes to reorganise their metropolitan territory. This has allowed the efficient integration of all municipalities into a single metropolitan entity. It is also important to explore the possibilities offered by new technologies, which can encourage citizen participation and foster more efficient government models. This will reduce the bureaucracy required and create new opportunities for participation in city affairs. Meanwhile, connectivity via digital technology is being used in many cities to improve services and foster togetherness.

**Dialogue with the environment.** Many cities have developed functions and clusters to help position them in the global economy. Singapore was able to establish a port, airport, and financial hub, and is now focusing on attracting talent, creating a biotechnology hub and leading the urban solutions field. Kuala Lumpur has attempted to establish itself as the multimedia centre of excellence via the Multimedia Super Corridor project, positioned between its international airport and the city centre. Boston, with its internationally-acclaimed universities, has been able to attract talent and develop knowledge-based economic activities. Miami, a meeting point between the United States and Latin America, initially depended heavily on its beach and resorts. Today, it has evolved into a financial, health, and art hub. Copenhagen and Malmö, as we highlighted, have strived to become global leaders in the green economy. Curitiba has specialised in the automotive industry; whereas Meknes, in Morocco, has specialised in agricultural production. Opportunities can also come from the establishment of urban centres in the hinterland within the systems of cities. This is especially common in Europe, where there is a rich system of historic settlements. Opportunities have

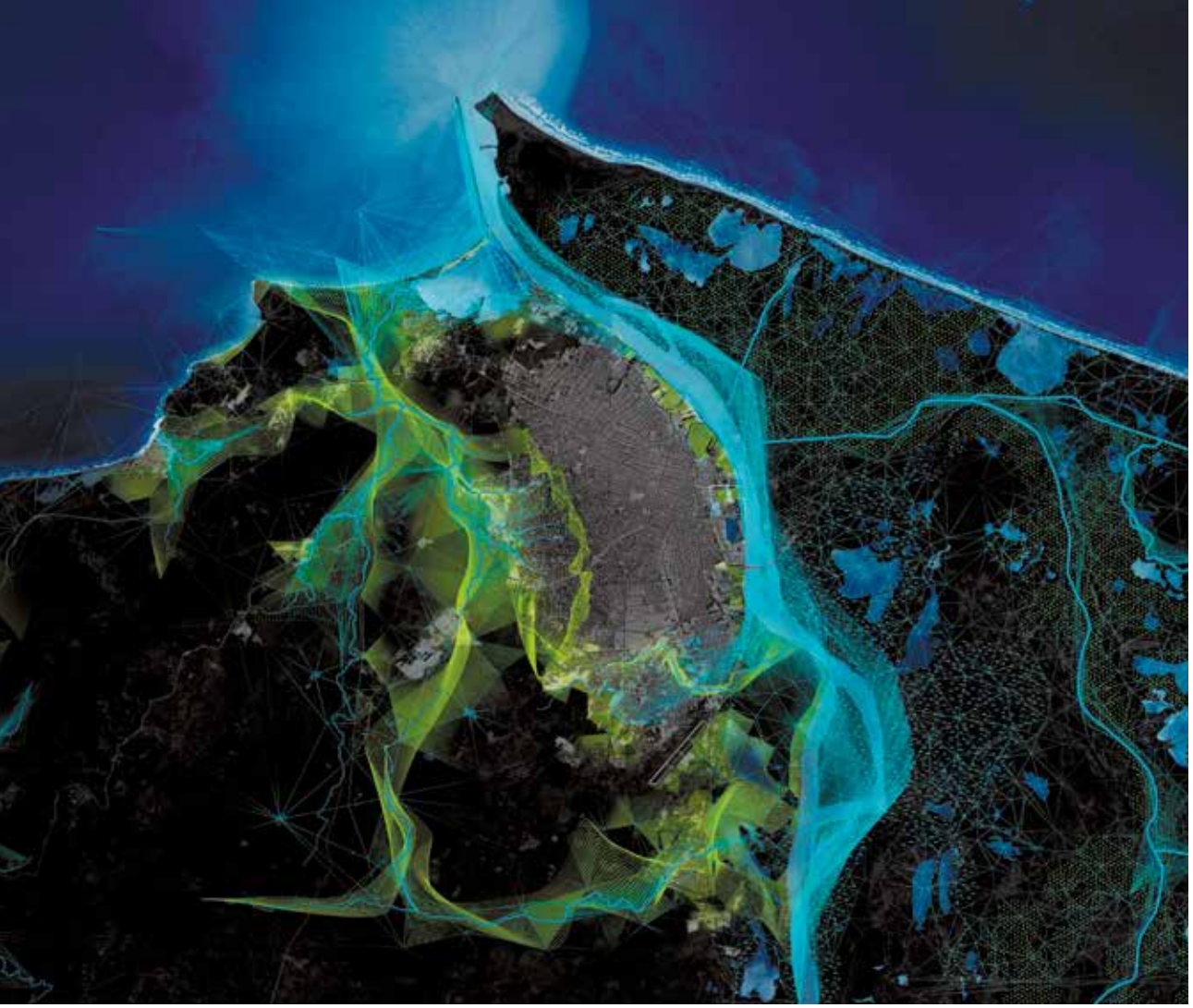
been derived from the cities' complementary profiles, strengthened connections, polycentric territorial structures, the development of supra-municipal functions, as well as the connection of cities with rural and natural spaces. This is the case for the Basque Country, which aims to become a point of reference in Europe with its Eukal Hiría project. Finally, the emergence of the city-region in the surroundings of the main metropolises now offers a wide realm of possible interactions. Organising metropolitan territories and urban regions will likely be the biggest challenge for 21st century urban planning. It is not easy to identify such urban profiles when planning is limited to the municipality level. The different territorial scales need to be developed through a strategic vision. An efficient approach to identifying strengths and strategic complementarity is to promote the aforementioned Diamond concept. This enables strategic projects that will enhance competitive advantages at different territorial scales.

**Commitment to innovation.** Companies that have achieved greater success in international markets tend to devote much effort to research, development, and innovation. Likewise, cities and regions can prepare themselves for the future through the design of innovative strategies. In an era of rapid change and transformation, standing still is arguably a bigger risk than change. The CITIES Project ratifies the importance of creativity and innovation, based on the accumulated knowledge of cities and territories. A skilled workforce is crucial to what we refer to as the 'innovation ecosystem'. Cities have advantages in innovation when they have educational infrastructure, articulated business clusters, and high-level research centres. Some cities that do not possess sophisticated educational infrastructure have sought to attract talent and businesses through quality of life, culture, and future projects. Singapore, for example, has created institutes to develop innovation in the city. For instance, the Centre for Liveable Cities (CLC) researches strategic issues for Singapore's future and interacts with cities and leaders around the globe. Together with the Urban Development Authority, it has developed initiatives such as the World Cities and Mayor Summits, City Solutions Expo, awards such as the Lee Kuan Yew World Cities Prize, as well as frequent publications, exhibitions, and lectures. This long-term initiative is allowing Singapore immediate access to the most innovative ideas in the field, connecting Singapore's emerging urban solutions sector to international markets. Ultimately, it is becoming a major laboratory for the field, thus producing solutions that can be exported to other cities and regions in the world.



**Connections with city networks.** In the globalised world, the concepts of network and flow have been increasingly favoured over the conventional static concept of a territory. A well-connected city has better access to economic opportunities. Traditionally, federal governments have monopolised international political relations through foreign affairs ministries and their embassies. Today, the growing prominence of cities demands an active quest for strategic alliances. Intelligent Territories are cities or regions which can weave the necessary connections to actively participate in networks. City networks can be based on complementarity, cultural harmony, geographic location, size, and urban profile. The CITIES Project demonstrates how links between distant cities can be established, thus overcoming conventional barriers. Like companies, universities, research centres, and people, cities too need to establish connections and strategic alliances to fulfil their goals. A city without a future plan will hardly be able to identify such connections. Meanwhile, urban diplomacy allows cities to learn from experiences using other examples, allowing them to develop strategies and receive external support.

**Integration of the virtual and physical world.** The digital revolution of the past decades has had a major influence on the economy, politics, and social relationships. A knowledge society is supported by the exchange of ideas and open collaborations. Meanwhile, Intelligent Territories require the appropriate digital technology to achieve their goals. As a result, what is key for future city projects is the integration between physical space and digital technology. This will encourage connections amongst people, institutions, and businesses, irrespective of the physical distance between them. The digital revolution has also allowed exchanges between art and technology, which act as the engine for the development of cities. Some cities seek this goal by developing Digital Districts dedicated to developing and attracting talent. In the current urban fabric, the distinctions between learning, work, and leisure are no longer apparent, thanks to new technologies capable of liberating education and work from their traditional spaces. Small companies and creative professionals also seek appealing environments that integrate leisure, culture, education, and housing. At the same time, reclaiming public space has become increasingly important in the digital era. Urban regeneration is a constant – the most vibrant urban spaces are often the ones hosting new economic activities. The digital revolution is transforming the territory's flows and nodes, thus organising society in a more flexible manner. In this way, Intelligent Territories can aim for the integration of the physical and virtual worlds, which is essential to attracting talent and creativity. Broadband





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connectivity is the foundation to activate tools such as cloud computing, mobile devices, social networks, and big data. The most advanced territories create local innovation ecosystems and economic clusters, which in turn generate new job opportunities. Their success in the new digital society will depend on having a shared project for the future, while leveraging on technology appropriate for the desired urban profile. Technology is capable of making our cities more efficient, transparent, sustainable, balanced, and competitive. Nevertheless, selecting suitable solutions and technology applications remains essential.

## EXCELLENCE COMPONENTS AND "INNOVATIVE URBAN ECOSYSTEMS"

The Clusters of Excellence concept was introduced in the CITIES Project. As we have pointed out in the previous section, the goal of this research is to identify the components of excellence of the selected cities. This refers to attractive urban elements of the city, especially those related to the city's physical and functional structures. Most cities and territories today have specific components that have contributed greatly to the distinctiveness of the region.

Such components can be very diverse. They can be residential areas, historic centres, new business parks, green rings, seaside areas, urban parks, green corridors, cultural traditions, new centralities, public transport systems, airports, logistic hubs, social housing programmes, university campuses, science parks, outstanding natural elements, road networks, landmarks, technological innovations, unique urban designs, environmental sustainability programmes, or organisational innovations. They could even be intangible elements of social architecture. The components of the Clusters are interrelated, permitting the establishment of a unique urban profile for each city.

In some cities, the components of excellence have already been well-developed, and in other cases, less so. Some cities, for example, have untapped potential that could lead to Clusters of Excellence. The Strategic Choices concept is important to create, recreate, or expand a city's Cluster of Excellence. Strategic Choices or Critical Projects were identified through research, as well as through an instrument called the 'Institutional Participation Course', which identified urban stakeholders' views. To identify Critical Projects, it is essential to understand how other competing cities are facing the future, as well as finding opportunities for collaboration.

Intelligent territories provide a new sensibility to the problems and opportunities offered by the environment. Barranquilla City Project.

As we have pointed out in other sections of this book, cities and territories today are in an open and competitive global environment. Cities need

to be globally competitive in their economic activities, culture, and uniqueness. This represents a new approach towards urban planning. Beyond the attempt of re-organising or re-designing the whole city, it requires future projects to be defined based on the city's assets and strengths. We refer to initiatives that can contribute to this aim as 'Critical Projects'.

We have learned that in order to design a space, it is necessary to have a full understanding of it. Only then can we identify, design, and implement Critical Projects that will trigger transformations. At times, certain components of excellence may already be well-developed in the city. In others, this is less straightforward, requiring favourable environments and a high degree of know-how.

Identifying Critical Projects and basic priorities is an essential element of urban policy. This can often be affected by limitations in human and economic resources, as well as political changes. The integration of the physical dimension of the city with its social and economic features is fundamental to Critical Projects. The Cluster of Excellence methodology employed around the globe has shown that identifying Critical Projects can form the backbone of an integrated City Project. This becomes a clear reference to guide the priority actions of both the public and private sectors, as well as civil society. The connection between local features and opportunities, established by this method and based in its territorial research, addresses the definition of urban design patterns that are capable of sparking local innovation ecosystems. One of the most significant issues of the contemporary work on cities is whether their innovation, creativity, competitiveness, and economic development can be stimulated through urban planning.



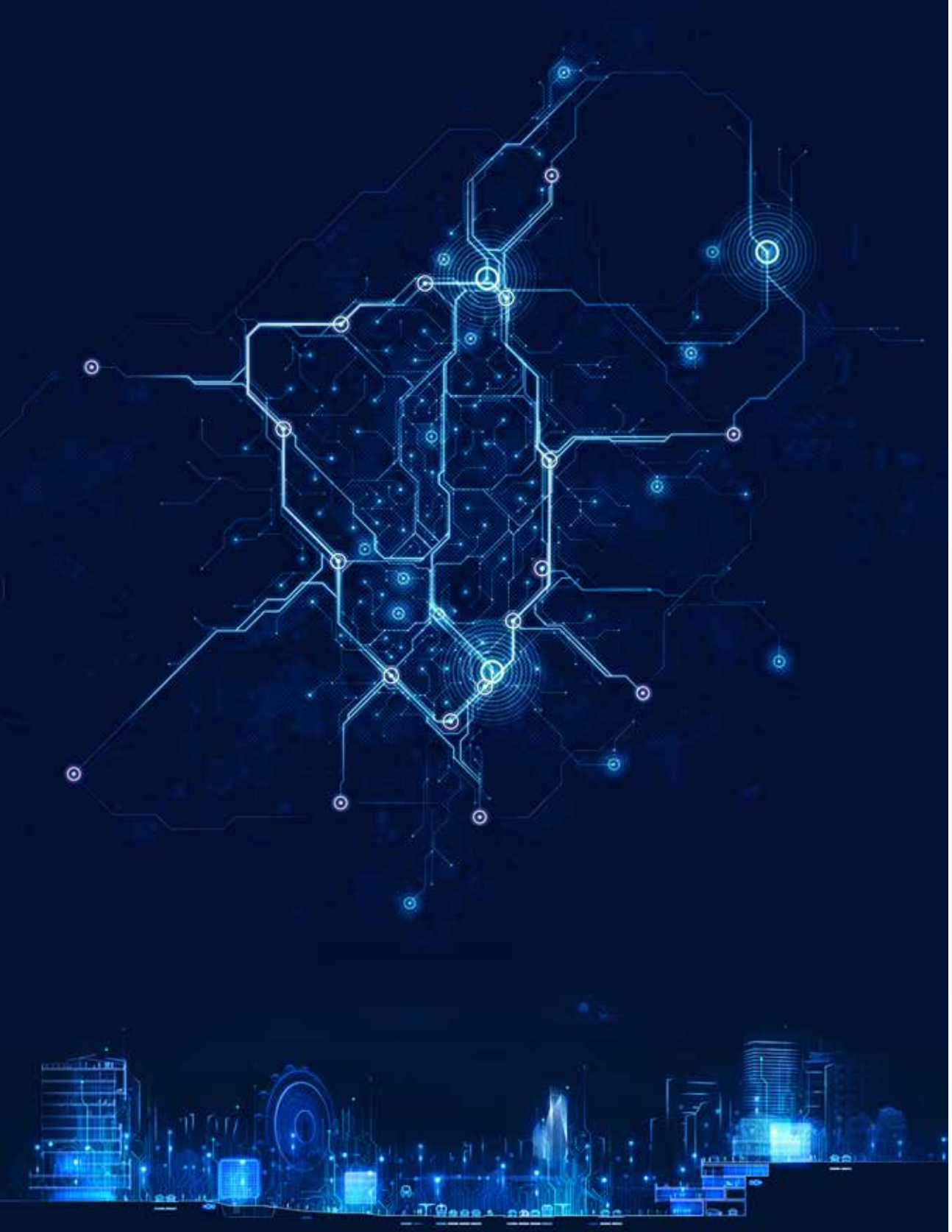
## TOWARDS A CITY PROJECT

The dawn of the 21st century has seen major changes in multiple aspects of our lives. Technological advancements have increased global interaction at all levels, with corporations adopting new strategies for the global market. The current global political structure makes it difficult to alter the redistribution of resources generated by the world economy. As such, increasing inequality and growing fractures between nations has changed demographic flows, social integration, and the perception of safety around the world. In particular, the 9/11 attack and other subsequent terrorist events have had radical effects on global security, migration, and even personal privacy.

All these changes have also affected cities and how they are managed. Today, inhabitants of cities interact within a global environment that surpasses local limits. As a result, businesses and people require strategies that transcend the physical limits of the city and its immediate surroundings. Cities themselves have had to use globalisation as a basic reference for organisation and planning.

Much has been written about competition between cities and how states are no longer the real functioning units of the new economy. At the same time, it is essential to investigate the structural causes of inequality. Companies today operate globally due to the availability of information, increased market transparency, the gradual elimination of international trade barriers, and advancements in digital technology. Citizens seek the best opportunities and move to regions that they find the most desirable. Amidst this, urban planning can provide physical support to corporations, while improving the quality of life of citizens.

The key issue for city governments, therefore, is how competitiveness can be improved. The research developed by the CITIES Project verifies that cities and regions can indeed develop competitive advantages in certain activities. This can be achieved by simplifying bureaucracy; increasing the efficiency of the public sector; and providing appropriate infrastructure and facilities, such as training facilities for organisations, adequate digital infrastructures, airports, logistics services, financial services, efficient mobility, affordable land, and quality public spaces. A city can also provide specific competitive advantages if it generates local clusters, fosters collective intelligence, and stimulates sets of activities and services suited to high-skilled jobs and innovative companies. Cities need to add value to the prevailing urban condition by making the right spatial decisions.[354]



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A city's competitiveness and quality of life depends on the city model, namely its urban structure and its functional profile. In many cases, these are issues managed by the local authorities. One of the main responsibilities of local governments is to guide the city model in an intelligent direction based on the place's identity and strengths. Local governments have to identify critical goals for the city and invest in them, although many leaders are only in office for a short period. Leadership is a crucial binding element in integrating the different components in the city. Citizen engagement is also essential. Thanks to new technologies, incorporating participative and collaborative principles have become increasingly feasible.

For decades, cities and regional governments have been organised via rigid sectorial departments. This provides scarce opportunities to build relationships and synergies. As a result, specific organisations for the development of intelligent projects are necessary. These are mainly fusion projects arising at confluence areas or intersection nodes – 'urban acupuncture' operations – as defined by urban leader, Jaime Lerner. We must work not only at the municipal level, but also address the different urban and territorial scales in order to design projects with greater impact.

The most innovative projects, such as One North in Singapore, are those that we can define as 'hybrid' initiatives. Such projects integrate urban design, innovation, housing, education, transport infrastructure, environment, talent attraction, and new technologies. Other areas in the city such as residential areas, environmental reserves, and port areas can also be developed through conventional sectorial policies. However, Critical Projects that can powerfully transform the city are transverse and require specific management. The 21st century city relies on innovation produced at the intersection of different disciplines, philosophies, and attitudes.

In a society facing great changes, urban planning cannot be cast aside. On the contrary, urban planners are responsible for offering a new conceptual framework and working tools. A city renaissance can only take place if its urban planning and policies are able to respond to new challenges.

The research developed by the CITIES Project established the basic distinction between cities irrespective of their size, economic development, or urban profile. Nevertheless, there are 'cities with a project' and 'cities without a project'. Intelligent Territories are capable of balancing economic strategy, social cohesion, development, and

The knowledge society is formed from the generalised access to information through a network which acts as a vehicle for the organisation and exchange of ideas, as well as an open collaborative path without limitations. Madrid BM30 Ecobulevar.

environmental conservation. These cities are equipped to face the change of sustainable development in the age of globalisation. Sustainability refers not only to environmental sustainability, but also economic, social, and cultural sustainability. Intelligent Territories use territorial strategies and participatory urban planning to achieve a balance between the environment, society, and economy.

The search for excellence and long-term projects does not belong only to cities from developed countries. Coherence and balance can be achieved at different development stages. Developing nations can leverage on the possibilities introduced by the globalised era, creating their own advantages through leadership, social engagement, and intelligent planning. As Jane Jacobs stated: "cities contain the seeds of their own regeneration, with energy enough to carry over for problems and needs outside themselves."

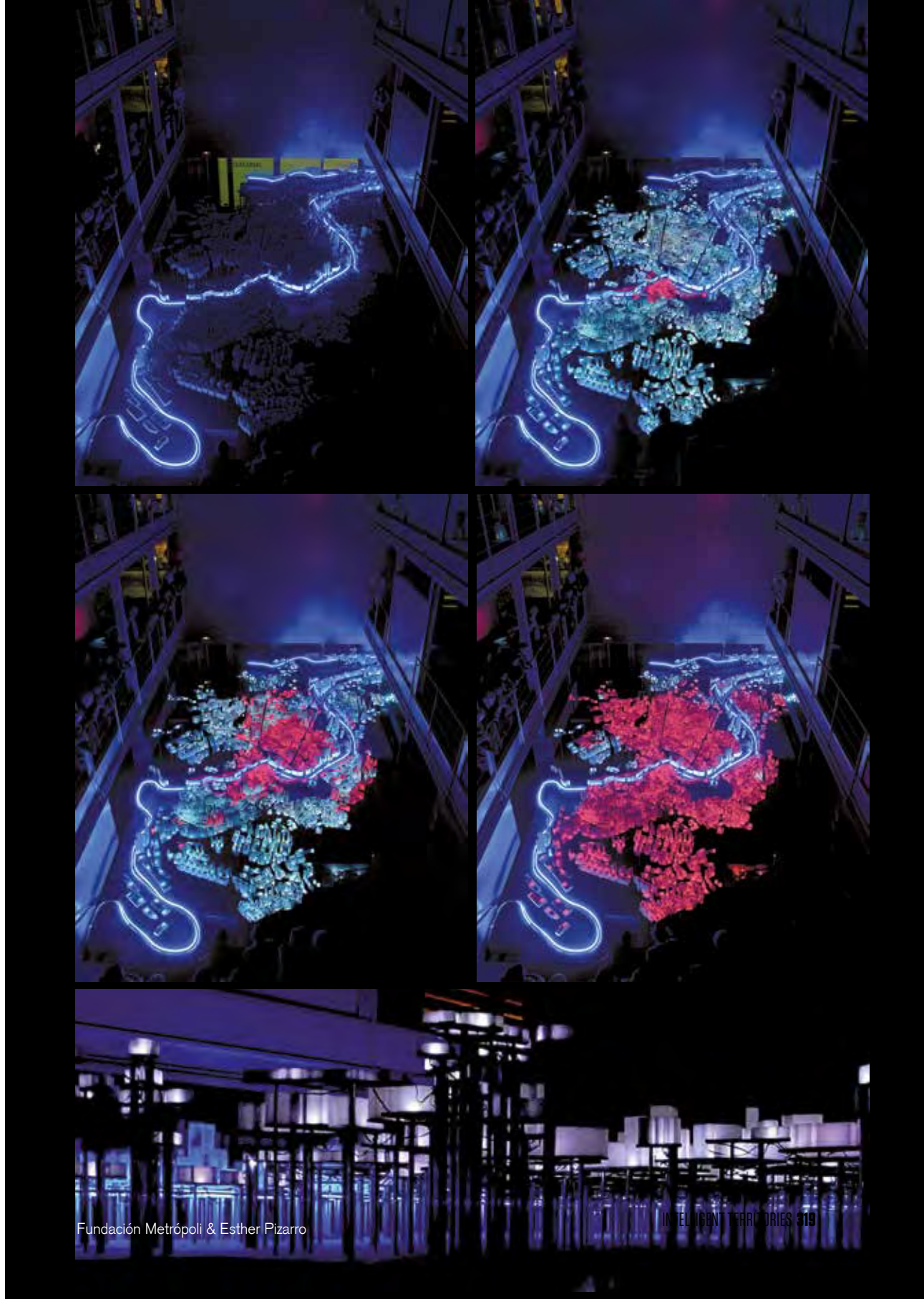
21st century urban planning is not a zero-sum game. The mere management of city budgets have very limited influence on the city's transformation potential. The answer may lie in governments and their ability to engage the civil society and the private sector in collective initiatives. A City Project is able to invigorate different actors and instil a sense of belonging.

To create an appealing city within the knowledge society, it is necessary to reinvent the cities' governments, grant more political and economic power to cities and regional territories, strengthen creative leaderships, generate public participation, and tailor-make plans according to the local context. All these are key aspects in defining a City Project focused on common interests.

The most liveable and successful cities in the future will likely be those that are able to balance economic competitiveness, social cohesion, and environmental sustainability. In a knowledge-based society, economic competitiveness depends largely on social balance and environmental quality. It is crucial for cities to highlight their identity and strengthen their global connections. The more attractive urban habitats will reinvent themselves in terms of social and environmental quality. At the same time, those with exciting plans for the future will be afforded a major advantage in the globalised world.

Supercities have a special ability to attract talent and innovative initiatives. They are magical places where intelligent territories can be fully expressed.





Fundación Metrópoli & Esther Pizarro

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4 "el urbanismo una especie de sentido común o tacto capaz de alcanzar la solución acertada?," roughly translated as "Is urbanism a sort of common sense or touch that is able to achieve the right solution?," from Gregotti, V. (1972) *El territorio de la arquitectura.* Barcelona: Gustavo Gili. p.184.

5 Many historians have researched the precedents of the modern urban plan. André Corboz analyses how the relation to the city was modified by the French Enlightenment. Around the 1700s, intervening in the city meant adding beauty to it. However, towards the 1800s, it meant protecting the city from specific identified risks while making it more viable with infrastructure. Corboz claims that we went from performance to analysis, from celebration to action, from ritual to knowledge. See Corboz, A. (1987) Verso la città controllata. In E. Castelnuovo and V. Castronovo, ed. 1987. *Europa: 1700-1992: storia di una identità. Volume 1: La disgregazione dell'Ancien Régime*. Milan: Electa.

6 The Duchess Adelheid Poninska from Leipzig, Germany published an essay on urban planning in 1874 under the pseudonym Arminius. The work focused on issues of the metropolis, the lack of housing and the need for public housing development using all available instruments: tax reform, real estate policy, and the promotion of housing and urban planning.

7 Some models which precede the Garden City such as the Eberstadt, Wolf and Stübben models for Berlin in 1910 have wedge-shaped parks in the city centre. Biological intuition is associated with an interpretation of urban growth rather than to environmental research.

8 Some models which precede the Garden City such as the Eberstadt, Wolf and Stübben models for Berlin in 1910 have wedge-shaped parks in the city centre. Biological intuition is associated with an interpretation of urban growth rather than to environmental research.

9 See Mancuso, F. (1980) *Las experiencias del zoning*. Translated by R. Arques. Barcelona: Gustavo Gili. At a very early stage, two different types of urban plans appeared in Germany: the plan for urban expansion (*Stadterweiterungsplan*) and the plan for urban renewal (*Umbauplan)* links to the street alignment plan *(Fluchtlinienplan)* and street extension plan (*Straßendurchbruch*), conceived as district development plans. Building was activated through construction plans (*Bebauungsplan*).

10 See Piccinato, G. (1993) *La construcción de la urbanística: (Alemania 1871-1914)*. Translated by Roa, M. Barcelona: Oikos-Tau. The first German urban planners obeyed the functional perspective. They conceived the master plan as an instrument of spatial and economic control of the city, via zoning and building regulations. Urban planning acknowledges conflict and compromise between public and private rights. The 'natural growth of the city' has become a discussion topic. Since 1924, urban management has participated in the development of public housing and greater control over the real estate market.

11 Joseph Hermann Stübben published *Der Städtebau, Handbuch der Architektur* in Darmstadt in 1890, a wide-ranging manual with a clear school of thought. His work as a master planner was very diverse, with plans for Cologne, Heidelberg, Wiesbaden, and Berlin, as well as advisory jobs for cities such as Rome or Madrid.

12 Camilo Sitte published *City Planning According to Artistic Principles* (often translated as the Art of Building Cities) in 1989.

13 Unwin, R. (1909) *Town Planning in Practice: An Introduction to the Art of Designing Cities and Suburbs.* London: T. Fisher Unwin.

14 The interest sparked by the English house was confirmed by the Hermann Muthesius book *Das englische Haus (*The English House) published in 1904. He would later preside over the *Deutscher Werkbund* (a German association of artists, architects, designers, and industrialists) and promote public housing in Germany.

15 There is a clear disinterest towards economic, administrative, or management issues in Unwin's manual. In this sense he resembles Sitte, whom he has quoted on a number of occasions.

16 There are three relevant books published by Mansell under the series 'Studies in History Planning & the Environment' on the origin, ideals, development and (then) current practices on urban planning in Europe with an emphasis on Great Britain. See Sutcliffe, A. (1980) *The Rise of Modern Urban Planning, 1800-1914*. London: Mansell; Cherry, G.E. (1980) *Shaping an Urban World*. London: Mansell; and Kain R. (1980) *Planning for Conservation: An International Perspective*. London: Mansell. Also, Paolo Sica's urban history manual remains exceptional; see Sica, P. (1982) *Historia del Urbanismo: el siglo XIX y el siglo XX.* Madrid: Instituto de Estudios de Administración Local.

17 In 1922 Lewis Mumford published his first book 'The Story of Utopias'. In the introduction to a later edition, Mumford wrote that the utopian creed as he came to conceive it, opposed unilateralism, sectarianism, bias, provincialism, and specialisation. See Mumford, L. (1962) *The Story of Utopias.* New York: Viking Press

18 See Choay, F. (1980) *La Règle et le Modèle : Sur la théorie de l'architecture et de l'urbanisme*. Paris: Seuil. Fabián Estapé's three-volume reissue of Cerdà's general theory of urbanisation and the application of its principles and doctrines to the reformation of Barcelona's Eixample which was originally published in 1876 is also a useful reference. Estapé highlights the absolute orginality and excellence of Ildefons Cerdà's work in town planning in the 19th century and includes a biography of Cerdà that was later republished as a standalone publication. See Estapé, F. (1971) *Teoría general de la urbanización y aplicación de sus principios y doctrinas a la reforma y ensanche de Barcelona* by Ildefons Cerdà, 1876. With supplementary material by F. Estapé. Barcelona: Instituto de Estudios Fiscales and Estapé, F. (2001) *Vida y obra de Ildefonso Cerdá*. Barcelona: Peninsula.

19 Corominas Ayala, M. (2002) *Los orígenes del Ensanche de Barcelona: suelo, técnica e iniciativa*. Barcelona: Edicions UPC.

20 Solá-Morales, M. (1978) Querido León, Por qué 22x22? *Arquitecturas Bis*, No.24

21 SCohen, J. (2013) *Etudes sur l'architecture et les transformations de Paris* by Eugène Henard,1909. Introduced by Jean-Louis Cohen. Paris: Editions de la Villette.

22 If there were any shortcomings in Cerdà's plans, it would be his neglect of Barcelona's waterfront.

23 Rueda, S. (2002) *Barcelona, ciutat mediterrània, compacta i complexa : una visió de futur més sostenible*. Barcelona: *Ajuntament de Barcelona, Direcció Educació Ambiental i Participació.* See also BCN Ecologia's website (www.bcnecologia.net).

24 Estapé, F. op. cit. (2001), p.261. Estapé recollects the statement by Professor Floresta on the occasion of the first centenary of the Eixample: "El proyecto... lo conocíamos mal; el tratado, ni bien ni mal, y la vida de Cerdá en absoluto" (roughly translated as "We hardly knew the project and the treaty, neither the good nor the bad, or of Cerdá's life"). Cerdá was greatly misunderstood when he was alive, and he died amid financial difficulties.

25 Schorske, C.E. (1979) *Fin-de-siècle Vienna: Politics and Culture*. New York: Knopf.

26 Wagner, O. (1988) *Modern Architecture*. Translated by H.F. Mallgrave. Santa Monica, California: Getty Center for the History of Art and the Humanities, p.114.

27 Berman, M. (1988) *All that is Solid Melts into Air: The Experience of Modernity*. New York: Penguin Books.

28 Chapin, F.S. (1995) *Urban Land Use Planning.* 4th edition with additional contributions by E.J. Kaiser, D.R. Godschalk, F.S. Chapin, Jr. Urbana: University of Illinois Press.

29 Instituto del Territorio y Urbanismo. (1989) *10 años de planeamiento urbanístico en España. 1979-1989*. Madrid: Ministerio de Obras Públicas y Urbanismo. During the launch of this book, A. Menéndez Rexach former director of Instituto del Territorio y Urbanismo (ITU) claimed that perhaps there has never been such an important contribution to city-planning culture in Spain

30 New interpretations of the urban fabric have transcended the administrative boundaries of cities and approach an 'extended use' of the territory, where 'mobility' has organised the daily experience. Michel de Certeau proposed the idea of the 'transhuman or metaphorical city'. The ambiguity of the contemporary space, the processes of appropriation and privatisation of space, the evanescence of the collective, the influence of free time, the opportunistic behaviour of the real estate market, and the density of space that denounces a diverse use of time are themes that should make us think about the lack of information about the processes that 'make' or 'build' the city and urban lifestyles. In the knowledge of contemporary urban spaces, 'reading the landscape' is not far from the practice of the territory, gained from the experience of inhabiting that territory. See de Certeau, M. (1984) *The Practice of Everyday Life.* Translated by Steven Rendall. Berkeley: University of California Press.

31 Recent major international symposiums have focused on the current urban agenda. For example, the Shanghai World Expo 2010 was themed 'Better City, Better Life', the World Urban Forum organised by UN-Habitat in Medellin in 2014 was themed 'Urban Equity in Development – Cities for Life', while the outcome of Habitat III (the United Nations Conference on Housing and Sustainable Urban Development) in Quito, Ecuador in 2016 was the New Urban Agenda.

32 See Secchi, B. (2000) *Prima lezione di urbanistica*. Rome: Laterza, p.139 Bernardo Secchi's book belongs to a family of works that addresses the urban interpretive crisis. See also Amin, A. and Thrift, N. (2002) *Cities: Reimagining the Urban*. Cambridge: Polity; and Cacciari, M. (2004) *La città*. Villa Verucchio: Pazzini Stampatore Editore.

33 Rem Koolhaas ironically argued: "the city is an increasingly 'generic' reality, are they or can they be like airports?" See Koolhaas, R. (1995) Generic Cities. In: R. Koolhaas and B. Mau, ed. *S, M, L, XL, Office for Metropolitan Architecture*. Rotterdam: 010 Publishers.

34 Solà-Morales questioned our ability to read 'the existing part of our cities' because we do not even have the 'vocabulary to do so'. A close reading of both the territory as well as social motivations and lifestyles is required. For Solà, the benefits of the analogous 'oil stain' come from the contact and from 'adjacency' where the sequence of emptiness and completeness responds with an adaptation to the local geography. He expanded this idea with the notion of 'topography' as a framework for urban deployment that is carried out in minute detail and over an 'open road network'. He proposed understanding contemporary Barcelona by 'reading the landscape'. According to Solà, to achieve general principles it is essential for a short distance and a precise explanation. See Solà-Morales, M. (1996) Contra el modelo de metropolis universal. In: A.M. Ramos, ed. *Lo urbano en 20 autores contemporáneos*. Barcelona: Edicions UPC

35 "Real estate assets are immobile, heterogenous, difficult to compare and evaluate, and their supply is determined by rigidities associated with their nature". Claval, P. (1981) *La logique des villes: essai d'urbanologie*. Paris: Litec.

36 Hayek, F.A. (1944) *The Road to Serfdom*. Chicago: University of Chicago Press.

37 Ascher, F. (2001) *Les nouveaux principes de l'urbanisme*. La Tour d'Aigues: Éditions de l'Aube.

38 Philosopher H.G. Gadamer's profound reflection published in 1966 that "the old problem of simply understanding the existing order of things is no longer the issue. It has given way to the difficulties of planning and creating an order not yet in being… Should something that does not yet exist be planned and implemented...? Does talk of creating a world order still make sense if, from the start, we are faced with irreconcilable ideas on the constitution of a right order? Can one plan according to a standard of world order if one is ignorant of the end toward which all mediating and possible steps proceed? Does not all planning on a world scale depend on the existence of a definite mutual conception of the goal?" See Gadamer, H.G. (1966) Notes on planning for the future. *Daedalus*, Vol. 95, No.2 Conditions of World Order (Spring issue), pp. 572-589.

39 Vegara, A. (2008) Planning and Beyond in the Globalising World. Inaugural Lecture of the UOC 2008-2009 Acacdemic Year. *UOC Papers, e-Journal of the Knowledge Society,* Issue 7. Universitat Oberta de Catalunya.

## 02. THE FUNCTIONAL CITY

40 In 2003, the European Council of Spatial Planners (ECTP-CEU) revisited and revamped the 'Athens Charter' by publishing the 'New Athens Charter'. The new version tried to maintain the original Charter's ambition and systematisation but added new content including on sustainability and social cohesion. The new document was updated and republished in 2013 as 'The Charter of European Planning', emphasising a new relationship between the city and region while advancing the principles of sustainable urbanism.

41 See Banham, R. (1960) *Theory and Design in the First Machine Age*. New York: Praeger and Hilpert, T. (1978) *Die Funktionelle Stadt: Le Corbusiers Stadtvision: Bedingungen, Motive, Hintergründe*. Braunschweig: Vieweg.

42 Conrads, U. (1971) *Programs and Manifestoes on 20th-Century Architecture.* Cambridge, MA: MIT Press.

43 It is possible to find through many voices a broad perspective, critical and current of 'functionalist architecture' and its nuances. See Henket, H-J. and Heynen, H. eds. (2002). *Back from Utopia. The Challenge of the Modern Movement*. Rotterdam: 010 Publishers

44 Le Corbusier (1931). *Towards a New Architecture*. Translated from French by Frederick Etchells. Reprint 1985. New York: Dover Publications.

45 Bollerey, F. (1989) Cornelis van Eesteren de cerca. *UR: Urbanismo Revista*, No. 8.

46 Le Corbusier (1973) *The Athens Charter*. Translated from French by A. Eardley. New York: Grossman Publishers.

47 In 1981, philosopher Jürgen Habermas delivered a lecture 'Modern and Postmodern Architecture' in Berlin. Habermas highlighted the effort and uniqueness of the Modern Movement where urban planning cannot be reduced to design problems. "Another indication that the urban life-world is becoming increasingly mediated by *system relationships that cannot be given form* is the failure of what was probably the most ambitious project of the New Architecture: to this day it has not been possible to integrate social housing projects and factories into the city. The urban agglomerations have outgrown the old concept of the city to which we gave our hearts; that is not the failure of modern architecture, or of any architecture at all." Habermas, J. (1989) *The New Conservatism: Cultural Criticism and the Historians' Debate*. Translated from German by S.W. Nicholsen. Cambridge, MA: MIT Press.

48 See Le Corbusier (1929) *The City of Tomorrow and its Planning*. Translated from French by F. Etchells. London: J. Rodker; Le Corbusier (1931). *Towards a New Architecture*. Translated from French by Frederick Etchells. Reprint 1985. New York: Dover Publications; Le Corbusier (1971) *Looking at City Planning*. Translated from French by E. Levieux. New York: Grossman Publishers; Le Corbusier (1979) *The Three Human Establishments*. Translated from French by E. Chowdhury. Chandigarh: Punjab Govt. Dept. of Town & Country Planning.

49 The text of the Athens Charter was prepared by Le Corbusier in occupied France in 1942 and published by Le Groupe CIAM. See Le Groupe CIAM – France (1943) *Urbanisme des CIAM. La charte d'Athènes*. Paris: Plon. Le Corbusier's version is the best known, accepted at the 7th CIAM, Bergamo in 1949. See Eric Mumford's review. Mumford, E.P. (2002) *The CIAM Discourse on Urbanism, 1928-1960.* Cambridge, MA: MIT Press.

50 See Albrecht, D. (2012) *Norman Bel Geddes Designs America.* New York: Abrams Books. This book was published as a companion volume to a landmark exhibition on the career of Norman Bel Geddes titled 'I Have Seen the Future' at the Harry Ransom Center in Austin.



51 On December 28, 1940, Sert received a letter from Lewis Mumford who wrote that the four functions of the city do not seem to adequately cover the field of urban planning. Housing, work, recreation, and transportation are important but Mumford questioned the role of the city's political, educational, and cultural functions played by the disposition and plan of the buildings in the holistic evolution of city design. The accusation of reductionism arose from the start, although the question centred on what the city seemed to need. See Rovira, J.M. (2000) José Luis Sert (1901-1983). Milan: Electa.

52 After World War II, the CIAM tried to revive its activities. In 1951, the 8th CIAM dedicated to city centres was celebrated in Hoddesdon, UK while the 9th and 10th CIAMs held in Aix-en-Provence (1953) and Dubrovnik (1956) were dedicated to the human habitat. See Tyrwhitt, J., Sert, J.L., and Rogers, E.N. (1952) *The Heart of the City: Towards the Humanisation of Urban Life*. London: Lund Humphries. In the 10th and final CIAM proceedings, some of the younger architects were critical in the debates. Already in the 9th CIAM, Smithson and Van Eyck openly criticised the four functions, raising issues such as identity and the need to recognise differences. Team 10 was formed. Herman Hertzberger even proposed a change in the use of buildings, the search for permanent elements for the creation of urban infrastructure. The Scandinavian architects were already working within a new 'human scale', a practice that would give rise to the so-called 'Nordic empiricism'.

53 During those years, Le Corbusier would develop his urban discourse. In 1943, he wrote his *Entretiens*, in 1944 he published *'Les trois établissements humains'* (translated into English as 'The Three Human Establishments'), while in 1946 he published *Manière de penser l'urbanisme* (translated into English as 'Looking at City Planning') which was written earlier. The Charter was the first work of this sequence. Le Corbusier continues to generate extensive debates; for a broad survey of his work, see Cohen,J-L. and Benton, T. (2008) *Le Corbusier Le Grand*. London: Phaidon Press.

54 Gorovitz, M. (1985) *Brasilia, uma questão de escala.* São Paulo: Projeto Editores.

55 Against the backdrop of Le Corbusier's Athens Charter written in 1942 in occupied France, José Luis Sert published 'Can Our Cites Survive?'. Sert's text reviewed and expanded the materials presented at the 4th CIAM and the 5th CIAM in 1937 in Brussels (which focused on housing and recreation), as well as the origin of the charter. Sert was vice-president of the CIAM. In addition to what he called the 'City Planning Charter' which came out of the Athens congress, he illustrated with diverse materials part of the 33 analyses of cities presented, portraying delegates' concerns and the advanced thinking with which they approached the cities' problems during the CIAM. They also displayed greater diversity of criteria and concerns than those conveyed by the 'self-propagandist' Le Corbusier. See Sert, J.L. (1942) *Can Our Cities Survive? An ABC of Urban Problems, their Analysis, their Solutions*. Cambridge: Harvard University Press.

56 Corboz, A. (1994) L'ipercittà. In: A. Corboz, ed. 1998. *Ordine sparso. Saggi sull'arte, il metodo, la città e il territorio*. Milan: Franco Angeli. Ch. 13. There is a confusion between the city and the 'urban' that leads to a constant review of the concept of the city. See Perulli, P. (2009) *Visioni di città. Le forme del mondo spaziale*. Milan: Einaudi.

57 See Jacques Herzog's article 'Terror without theory: the 'indifferent city'" (rough translation). Herzog, a prestigious architect proposed indifference as a defence strategy in a dark / pessimistic article on the unsuspected vulnerability of the World Trade Centre's Twin Towers, an urban icon destroyed in a terrorist attack. Cities however, do not enjoy this indifference. European cities silently admire the vigour of great North American cities and emulate their urbanism. For example, while the North American downtown is replicated at the La Castellana boulevard in Madrid, the historic European city serves as the inspiration for urban spaces recreated in North America. See Herzog, J. (2003) Terror sin teoría: la 'ciudad indiferente'. *El Pais, Babelia*, 13 Dec.

58 We have learned to recognise that quality. See Lampugnani, V.M. (2000) La ciudad normal*. El Pais, Babelia.* 30 Dec.

59 The promotion of a pedestrian-friendly city, i.e. a 'walkable city', grows where there is limited experience of a traditional city. See Speck, J. (2013) *Walkable City: How Downtown can Save America, One Step at a Time*. New York: North Point Press.

60 City of Sydney (2013) Five Big Moves. Transforming the City. In: *Sustainable Sydney 2030: The Vision*. Sydney: City of Sydney.

61 Moscow Urban Forum (2013) *Urban Agenda. Workbook.* Moscow: Moscow Urban Forum.

62 Ayuntamiento de Bilbao (n.d.) *Plan de Gobierno 2011-2015*. Bilbao: Ayuntamiento de Bilbao.

## 03. NEW TOWNS

63 John Nolen (1868-1937) a pioneer of urban planning in North America was elected president of the National Conference on City Planning (NCCP) in 1926 and planned 27 new cities across the United States. Nolen wrote that "new town planning, new forms of architecture and landscape architecture, new engineering should unite more and more, as there is now an opportunity to do, in a harmonious expression of new city ideals." See Nolen, J. (2005) New Communities for New Conditions. In: *New Towns for Old: Achievements in Civic Improvement in some American Small Towns and Neighbourhoods.* Amherst, Boston: University of Massachusetts Press.

64 Ashworth, W. (1954) *The Genesis of Modern British Town Planning: A Study in Economic and Social History of the Nineteenth and Twentieth Centuries.* London: Routledge & Kegan Paul.

65 See Howard, E. (1898) *To-Morrow: A Peaceful Path to Real Reform*. London: Swan Sonnenschein and Howard, E. (1946) *Garden Cities of To-Morrow*. London: Faber and Faber. Edited, with a preface by F.J. Osborne; with an introductory essay by Lewis Mumford

66 The first name Howard gave to his urban schemes was 'social city'. See Bayley, S. (1975) *The Garden City.* Milton Keynes: Open University Press.

67 The concentric urban model characteristic of the ideal city since Vitruvius, does not appear merged with the countryside until Howard's Garden City.

68 This group became known as the 'New Townsmen' and had members including Ebenezer Howard, C.B. Purdom, F.J. Osborn, and W.G. Taylor.

69 Thomas, A. (1998) *Outline of Town and City Planning: A Review of Past Efforts and Modern Aims*. New York: Routledge / Thoemmes Press. Adams insisted on the importance of political leadership and administrative regulations and actions to achieve urban objectives that are always subject to uncertainty.

70 Royal Commission on the Distribution of the Industrial Population (1940) *The Report of the Royal Commission on the Distribution of the Industrial Population*. London: H.M.S.O. The report by the commission was presented in 1937 and presided by Sir Anderson Montague-Barlow.

71 See Hall, P. (1994). *Urban & Regional Planning.* 3rd edition. London: Routledge. From the Barlow Report and the subsequent expert reports between 1941 and 1947 (the Distribution of Industry Act 1945, the New Towns Act 1946, and the Town and Country Planning Act 1947), the new British planning system was formed. These acts were approved by the Labour government and constituted the fundamental legal basis of the modern British urban planning system and the nationalisation of urban development regulations. The origin of national urban development rights linked to master plans and local authorities that were created, articulate compensation rights. For example, in the case of New Towns the value of land purchased was the initial value, without compensation rights. Subsequent relevant acts include the National Parks and Access to the Countryside Act 1949 and the Town Development Act 1952.

72 Abercrombie, P. (1959) *Town and Country Planning*. London: Oxford University Press.

73 On this issue, Frederic Osborn and Arnold Whittick's work stands out. See Osborn, F.J. and Whittick, A. (1969) *The New Towns: The Answer to Megalopolis*. London: Leonard Hill.

74 C.A. Perry (1929) *The Neighbourhood Unit: A Scheme of Arrangement for the Family-Life Community.* Monograph One, Neighbourhood and Community Planning, Regional Plan of New York and Its Environs. New York: Committee on Regional Plan of New York and its Environs.

75 Golany, G. (1976) *New-Town Planning: Principles and Practice*. New York: Wiley; Alexander, A. (2009) *Britain's New Towns: Garden Cities to Sustainable Communities.* London: Routledge.

76 Gibberd, F. (1953) *Town Design.* London: Architectural Press.

77 Greater London Council, Department of Architecture and Civic Design (1978) *An Introduction to Housing Layout: A GLC Study*. London: Architectural Press.

78 See Buchanan, C. (1963) *Traffic in Towns: A Study of the Long Term Problems of Traffic in Urban Areas*. London: H.M.S.O. Buchanan's predecessor was H.A. Tripp, an experienced London police chief who published *Town Planning and Road Traffic* in 1942, presenting the idea of an enclosure for the very first time. See Tripp, H.A. (1942) *Town Planning and Road Traffic.* London: Edward Arnold.

79 There are very few comprehensive works on 20th century urban planning practice in Europe. One relevant work is by Koos Bosma & Helma Hellinga. See Bosma, K. and Hellinga, H. eds. (1997) *Mastering the City: North European City Planning 1900-2000*. Rotterdam: NAI Publishers.

80 Sven G. Markelius (1889-1972) led Stockholm's planning office between 1944 and 1954. A disciple of Gunnar Asplund and a friend of Alvar Aalto, he was commited to the initial social ideals of the Modern Movement.

81 Tapiola was designed by Aarne Ervi in 1953 after winning a competition. The central figure in Tapiola's development was Heikki von Hertzen who led the Seven Cities plan. He organised the town development company and his initiative, capabilities, and energy made its financing possible. Von Hertzen summarised his objectives as: family welfare is not possible without good housing. Good housing is not possible without a good town plan. A good town plan is not possible without good regional planning. And good regional planning is not possible without a national urbanisation plan. See von Hertzen, H. and Spreiregen, P.D. (1971) *Building a New Town: Finland's New Garden City.* Cambridge, MA: MIT Press and Nikula, R. ed. (1994) *Heroism and the Everyday. Building Finland in the 1950s.* Helsinki: Suomen rakennustaiteen museo.

82 Hall, P. (1988) *Cities of Tomorrow: An Intellectual History of Urban Planning and Design in the Twentieth Century.* Oxford: Blackwell.

83 See Atelier International du Grand Paris (2012) *Douze clefs de lecture pour comprendre le Grand Paris*. Paris: Atelier International du Grand Paris and Conseil régional d'Île-de-France (2012) *Île-de-France 2030 Vision Régionale*. Paris: Conseil régional d'Île-de-France. The idea of Paris as a permanent project space is demonstrated in the exhibitions at the Pavillon de l'Arsenal such as Paris Metropole 2020, showcasing a large interactive model displaying current projects throughout the city.

84 DATAR (Délégation interministérielle à l'aménagement du territoire et à l'attractivité régionale).

85 OREAM (Organisme régional d'étude et d'aménagement d'aire métropolitaine).

86 In 1967, the core of the legislation that would allow for territorial planning and urban planning legislation in France was developed – The Law of Real Estate Orientation and the Law of Urban Land Use – along with other financing measures. In 1970, the central group for the new Towns was created in 1970.

87 The initial reaction to new towns in the countryside was negative. They were seen as the invasion of large real estate business ventures that were costly. The public administration successfully managed the backlash and persisted with its initiatives.

88 In addition to Paris, these were Lille-Roubaix-Tourcoing, Nancy-Metz-Strasbourg, Lyon-Saint Etienne, Marseille, Toulouse, Bordeaux, and Nantes.

89 See Bracco, S. (1988) *Sistemas metropolitanos de las nuevas ciudades*. Barcelona: Oikos-Tau. p.9. and Merlin, P. (1971) *New Towns: Regional Planning and Development*. Translated from French by Margaret Sparks. London: Methuen.

90 Sabrié, M.L. (1993) *Saint-Quentin-en-Yvelines, histoire d'une ville nouvelle*. Paris: Cliomédia

91 The translation allows the double meaning of territories that are both divided and shared. See Éd. du Pavillon de l'Arsenal (2002) *Territoires partagés, l'archipel métropolitain*. Paris: Picard.

92 The People's Republic of China, the most populous nation in the world with 1.35 billion people in 2013 is currently the second largest economy globally by GDP. The strict political control by the Chinese Communist Party coupled with its economic pragmatism and a certain degree of liberalisation in some social aspects has seen it manage to maintain its dynamism in an urbanisation context despite economic crises and a real estate bubble.

93 International urban planning teams from Australia, France, Germany, Great Britain, the Netherlands, Italy, Russia, Scandinavia, and Spain collaborated. See Sun, T. and Liu, Q. (2001) On 'One City, Nine Towns' Plan. *Time Architecture*. 3. pp.37-39.

94 Chinese administrators asked each team to integrate urban planning characteristics of their own countries into the project. Well-known concepts of Spanish urban planning became key components in the proposal such as the linear city, boulevard, main square, main street, and station boulevard. See Fundación Metropoli (2001) *One City, Nine Towns, Fengxian-Fengcheng, Eco-Linear City.* Barcelona: Fundación Metropoli.

95 Hartog, H.D. ed. (2010) *Shanghai New Towns: Searching for Community and Identity in a Sprawling Metropolis*. Rotterdam: 010 Publishers.

96 Suzhou (Jiangsu Sheng, China) (2014) *Beautiful Suzhou: A City of Timeless Charm and Eastern Elegance*. Suzhou: Guwuxuan Publishing House.

97 Zhou, N. (2014) Suzhou. In: *Urban Solutions*, No. 5. Singapore: Centre for Liveable Cities.

98 Whyte, W. (1968) *The Last Landscape*. Garden City, New York: Doubleday. p.242.

## 04. URBAN PLANNING AND PARTICIPATION

99 Lefebvre, H. (2003) *The Urban Revolution*. Translated from French by R. Bononno. Minneapolis: University of Minnesota Press. p.11. The influence of this French philosopher has increased over time. See Merrifield, A. (2006) *Henri Lefebvre: A Critical Introduction.* New York: Routledge. The concept of *heterotopia* coined by Michel Foucault influenced urban social theory due to its ability to explain the fragmentation and contradictory diversity of meanings of contemporary urban spaces. See Dehaene, M. and de Cauter, L. eds. (2008) *Heterotopia and the City: Public Space in a Postcivil Society*. London: Routledge; and de las Rivas, J.L. (1992) *El espacio como lugar: sobre la naturaleza de la forma urbana*. Valladolid: Universidad de Valladolid.

100 See Weber, M. (1987) *The City*. New York: Free Press; and Arendt, H. (1958) *The Human Condition*. Chicago: The University of Chicago Press.

101 See Lefebvre, *The Urban Revolution*. p. 27.

102 William Ruttman's magnificent 1927 documentary film, 'Berlin: Die Sinfonie der Großstadt (Berlin: Symphony of a Great City)' is a journey in a day in the city centre would complement the perspective of these grand narratives, demonstrating the awakening of our senses in the big city.

103 White, M.G. and White, L. (1962) *The Intellectual Versus the City: From Thomas Jefferson to Frank Lloyd Wright.* Cambridge, MA: Harvard University Press.

104 Park, R.E., Burgess, E.W., and McKenzie, R.D. (2000) *The City: Suggestions for Investigation of Human Behavior in the Urban Environment.* Chicago: University of Chicago Press. Bettin provides a useful summary of the main approaches of urban sociology from the 20th century. See Bettin, G. (1979) *I sociologi della città.* Bologna: Società Editrice il Mulino. See also Lezama, J.L. (1993) *Teoría social, espacio y ciudad*. México, D.F. : El Colegio de México

105 Wirth, L. (1938) Urbanism as a Way of Life. *American Journal of Sociology*, Vol 44, No. 1, July.

106 Jacobs, J. (1961) *The Death and Life of Great American Cities.* New York: Random House.

107 "… the restoration of the meaning of the oeuvre that philosophy and art can bring so as to prioritise time over space, not forgetting that time comes to inscribe itself and to be written in a space – and thus replace domination by appropriation." Lefebvre, H. (1996) *Writings on Cities*. Translated from French and edited by E. Kofman and E. Lebas. Oxford: Blackwell Publishers.

108 Harvey, D. (1977) *Social Justice and the City*. London: Edward Arnold; Castells, M. (1978) The Social Function of Urban Planning: State Action in the Urban – Industrial Development of the French Northern Coastline. In: *City, Class and Power*. London: Macmillan; Castells, M. and Godard, F. (1974) Monopolville : analyse des rapports entre l'entreprise, l'État et l'urbain à partir d'une enquête sur la croissance industrielle et urbaine de la région de Dunkerque. Paris: Mouton; Castells, M. (1977) *The Urban Question: A Marxist Approach*. Cambridge, MA: MIT Press.

109 The concept of governance includes different perspectives on the exercise of power in democratic societies, with a common reflection on the promotion of new forms of politics and public action in a networked society, capble of activating greater political pluralism. See Bassols, M. and Mendoza, C. (2011) *Gobernanza : teoría y prácticas colectivas.* Rubí, Barcelona: Anthropos.

110 Remy, J. and *Voyé,* L. (1992) *La ville : vers une nouvelle définition?* Paris: L'Harmattan.

111 Alexander, C. (1979) *The Timeless Way of Building*. New York: Oxford University Press. Christopher Alexander's ambitious four-volume work, 'The Nature of Order' highlights his research on the making of architecture from traditional culture and scientific knowledge of nature and society. Alexander, C. (2005) The Nature of Order: An Essay on the Art of Building and the Nature of the Universe. Berkeley: Center for Environmental Structure.

112 Alexander, C., Ishikawa, S. and Silverstein, M. (1968) *A Pattern Language: Towns, Buildings,* Construction. Berkeley: Center for Environmental Structure. Alexander et al. anticipated many issues that are linked to sustainable urbanism today. The considerations and references expressed in 'patterns' come from an encyclopaedic knowledge and a great effort of systemisation and categorisation.

113 Douglas, M. and Friedmann, J. eds. (1998) *Cities for Citizens: Planning and the Rise of Civil Society in a Global Age*. New York: J. Wiley; Friedmann, J. (2002) *The Prospect of Cities.* Minneapolis: University of Minnesota Press. The 'occupy' movements that occurred in Europe and America from 2009 indicate the increasingly shared idea that there is something wrong in our society, thus emphasising the need for planning that addresses these circumstances.

115 Soja, E.W. (1996) *Thirdspace: Journeys to Los Angeles and Other Real-and-Imagined Places.* Cambridge, MA: Blackwell; Davis, M. (1992) *City of Quartz: Excavating the Future in Los Angeles*. New York: Vintage Books; Davis, M. (1994) Cannibal City: Los Angeles and the Destruction of Nature. In: E.A.T. Smith, ed. *Urban Revisions*. Cambridge, MA: MIT Press; Davis, M. (1999) *Ecology of Fear: Los Angeles and the Imagination of Disaster*. New York: Vintage Books.

116 Sandercock, L. (1998) The Death of Modernist Planning: Radical Praxis for a Postmodern Age. In: M. Douglass and J. Friedmann, eds. *Cities for Citizens: Planning and the Rise of Civil Society in a Global Age.* New York: J. Wiley.

117 Pfeifer, L. (2013) *The Planner's Guide to Tactical Urbanism*. [online] Available at:< https://reginaurbanecology.wordpress.com/projects/tactical-urbanism-guide>

118 This theme is developed by Richard Sennett in his book 'The Uses of Disorder'. Sennett, R. (1970) *The Uses of Disorder: Personal Identity & City Life*. New York: Knopf.

119 See Lefebvre, H. (1974) *La production de l'espace*. Paris: Anthropos. This is a highly topical work in which Lefebvre tried to build a new rationality about urban planning conceived as a multidiscipline in constant formation. With De Certeau, he insisted on the City as a space of home, provision, leisure, and conflict. The idea of the 'third space' stands out, which is not the physical space we experience with our senses, nor the representation of that space, characteristic of technical work. It is a space that is planned and governed. The third space is a a space open to diverse meanings, activated by action and social imagination, complex and interesting, that interacts with the space of daily life and its expectations. This 'third space' is deeply social and anthropological, a space of mentalities and motivations, offering an opportunity to explain the urban.

120 De Las Rivas, J.L. (2010) El espacio público y lo urbano cotidiano: ideas para un proyecto renovado. In: M.A. Castrillo and M. Viladevall, eds. *El espacio público en la ciudad contemporánea : perspectivas críticas sobre su gestión, su patrimonialización y su Proyecto. Valladolid: Universidad de Valladolid.*

121 Dorfles, G. (1991) Alla ricerca dell'identita spaziale: per un nuovo rapporto uomo-habitat. In: J. Gottmann and C*. Muscarà,* eds. *La città prossima ventura.* Rome: Laterza.

122 Some authors have claimed that the European city oscillates between two poles: *polis,* the city-state and fortress and *civitas*, the city of citizens. The bourgeois, the inhabitants of the *polis*, would be the engine of economic growth, while the citizens, inhabitants of the *civitas*, would be defenders of social equality. It is evident that in the development of urban society, diverse populations have merged and sometimes, the economic and working person seems to lead a completely different life from the political person. They are the inhabitants of the *urbs*, the open and complex city of ancient Rome. But are those living in the *urbs* inhabitants or citizens? The question about the contemporary sense of citizenship, a concept that refers to someone who participates in the leadership of the city does not have an easy answer. See Cacciari, M. (1987) Aut civitas aut polis? *Casabella*, October, 539; and Dahrendorf, R. (1991) *El conflicto social moderno : Ensayo sobre la política de la libertad.* Barcelona: Mondadori.

123 Ferdinand Tönnies coined the concepts of *Gemeinschaft* (community) and *Gesellschaft* (society). Community is based on personal relationships, such as the family where its reason for being is innate. However, society is rationally organised to reach specific goals. Both community and society coexist and mix.

124 Angotti, T. (2008) *New York for Sale: Community Planning Confronts Global Real Estate*. Cambridge, MA: MIT Press.

125 Rankin, T. and Stack, T.W., eds. (2000) *Local Heroes Changing America: Indivisible*. New York: Center for Documentary Studies. The Village of Arts and Humanities received the prestigious 'Rudy Bruner Award for Urban Excellence' in 2001. Similarly, in the field of architecture, Samuel Mockbee and his student workshops have been exceptional, designing and building homes for the poorest in the U.S. South. See Dean, A.O. and Hursley, T. (2002) *Rural Studio: Samuel Mockbee and an Architecture of Decency*. New York: Princeton Architectural Press.

126 Eger, J.M. (2002) *The Creative Community: Forging the Links Between Art, Culture, Commerce & Community*. San Diego: The California Institute for Smart Communities, San Diego State University.

127 Perulli, P. (1995) *Atlas metropolitano. El cambio social en las grandes ciudades*. Madrid: Alianza Editorial. p. 116.

128 Florida, R. (2002) *The Rise of the Creative Class: And How It's Transforming Work, Leisure, Community and Everyday Life*. New York: Basic Books. Not all societies are creative to the same extent. For example, copyright exports in the United States since 1998 have exceeded 60% of the total, which is an objective measure of an exceptionally dynamic economy.

129 Morse, S.W. (2004) *Smart Communities: How Citizens and Local Leaders Can Use Strategic Thinking to Build a Brighter Future*. San Francisco: Wiley.

130 Today, Medellin is a model urban space. The 7th World Urban Forum organised by UN-Habitat was celebrated in the city in April 2014. The meaningful theme of the forum was 'Urban Equity in Development – Cities for Life', which summarised the strategy of a city capable of providing urban action.

131 Sánchez, A. (2010) Urbanismo social: la metamorfosis de Medellin. *Barcelona Metropolis*, No. 77. Available at: < http://lameva.barcelona.cat/bcnmetropolis/2007-2017/wp-content/uploads/2012/07/77-la-ciudad-del-miedo.pdf>

## 05. CITY CENTRE RENAISSANCE

132 Moore, C. W. (2001) *You Have to Pay for the Public Life: Selected Essays of Charles W. Moore.* Edited by K. Keim. Cambridge, MA: MIT Press.

133 Gombrich resorts to *damnatio memoriae*, the conservation of the past seems to correspond to a certain 'Law of Compensation' where the faster the transformation, the greater the desire for permanence. He affirms that it is precisely the history of legislation that demonstrates how much the pressure of public opinion has contributed, over the last hundred years, to the extension of the concept of the monument, which gradually has come to encompass architectural heritage as a whole, including our streets and squares, even when they cannot claim any kind of historic significance. Gombrich, E. (1989) ¿Porqué conservar los edificios antiguos? *Revista Arquitectónica,* no. 2, p.131.

134 Choay, F. (1992) L´invention du patrimoine urbain. In: *L´allégorie du patrimoine*. Paris: Seuil. p.148.

135 In 1913, Gustavo Giovannoni published the article '*Vecchie città ed edilizia nuova'* which he reused as the title for his 1931 book. See Giovannoni, G. (1985) *Vecchie città ed edilizia nuova*. 2nd edition. Milan: *Città* Studi Edizioni.

136 Among its precedents, we can highlight the UK's Ancient Monuments Act 1931 which includes the demand of protection of the surroundings of ancient monuments, Italy's Protection of Natural Beauties Act 1939 which includes the protection of complex works that are characteristic as a whole and constitute aesthetic and traditional value, and the 1958 Czech Act on Cultural Monuments which included 'conservation areas'.

137 French Law established the definition of *secteurs sauvegardés*, namely protected areas required to have a *plan permanent de sauvegarde et de mise en valeur*, similar to a master zoning plan. The law provided for specialised personnel, a chief architect for each sector, coordination of roles between the various ministries involved, financing instruments, and regulations to protect serious social cases. These are executive plans, aimed at concentrating funds and efforts for specific and tangible areas. It attempts to protect tenants, leaseholders, and the maintenance of uses on the ground floors, either residential, commercial or professional.

138 Since 1967, the British Civic Amenities Act established the possibility to declare areas of architectural or general historic interest as conservation areas. Later, the Town and Country Planning Act included this concept and that of action or intervention areas. See, Kain, R.J.P., ed. (1980) *Planning for Conservation: An International Perspective*. London: Mansell.

139 The Venice Charter, the original document for the rationale for conservation formulated in 1964 states that "The concept of a historic monument embraces not only the single architectural work but also the urban or rural setting in which is found the evidence of a particular civilization, a significant development or a historic event. This applies not only to great works of art but also to more modest works of the past which have acquired cultural significance with the passing of time." The 1972 *Carta del Restauro*, published by the Italian Ministry of Education states that the guidelines apply to the following categories of objects to assure their conservation and restoration: building complexes of monumental, historical, or environmental interest, in particular historic urban areas; art collections; historic furnishings and interior decors preserved in their traditional arrangement; gardens and parks of particular importance. A number of events since the one held at Gubbio in 1970 have critically explored the issue. See Ciardini, F. and Falini, P., eds. (1978) *Los centros históricos*. Barcelona: Gustavo Gili.

140 UNESCO (2010) *Managing Historic Cities*. *World Heritage Papers No. 27.* Paris: UNESCO World Heritage Centre.

141 It was the architect-archaeologists who, compelled by the nature of their work, began to develop urban cartographies capable of offering a new vision of the past. Works such as Lanciani's *'Forma Urbis Romae'*, drafted between 1893 and 1901 would strongly influence architects such as Muratori. See Gregotti, V., ed. (1993) L'archeologia degli architetti. *Rassegna,* no. 55.

142 Vegara, A. and De Las Rivas, J.L. (1986) *Urbanismo de Ideas. Sinergia de una Escuela de arquitectura*. Bilbao: Diputación Foral de Vizcaya. Biological and linguistic analogies have been commonly used to explain urban phenomena and have contributed to the formulation of a series of concepts that have been assimilated today. However, it was the French geographers who first applied the term 'morphology' in their studies on cities, with a clear reference to the problem of 'form'.

143 See Calabi, D. (1997) *Parigi anni venti: Marcel Poëte e le origini della storia urbana*. Venice: Marsilio. Pierre Lavedan, the urban historian known for his 1927 essay *'Geographie des villes'* shared this view.

144 Like other the other committed architects (Fernando García Mercadal, Luis Feduchi and later Carlos Flores), Pagano was interested in the rural environment. '*Architettura rurale Italiana'* attempted to revive popular vernacular construction, to show its logical clarity and strength, a legacy often forgotten.

145 Rogers, E.N. (1997) *Esperienza dell'architettura*. Milan: Skira.

146 Samonà, G. (1975) *L'unità architettura-urbanistica : scritti e progetti,* 1929-1973. Milan: Franco Angeli.

147 Muratori, S. (1959) *Studi per una operante storia urbana di Venezia.* Rome: Istituto Poligrafico dello Stato. Father of the typo-morphological method, Muratori relied on history rather than originality and inventiveness. His disciple and colleague, Gianfranco Caniggia developed typo-morphological analysis in his first work, '*Lettura di una città'*.

Muratori, Saverio, 1959. *Studi per una Operante Storia Urbana di Venezia.* Roma: Istituto Poligrafico dello Stato. Father of the typo-morphological method, Muratori relied on history versus originality and invention. His disciple and colleague, Grianfranco Caniggia, developed the typo-morphological analysis in his first work *Lettura di una città. Como*, 1963. See Aymonino, C. et al. (1970) *La città di Padova : saggio di analisi urbana*. Rome: Officina.

148 Rossi, A. (1982) *The Architecture of the City*. Cambridge, MA: The MIT Press.

149 From Aldo Rossi's introduction to the second edition of the Italian edition of 'The Architecture of the City'. J.L. de las Rivas demonstrated the analogy between different concepts related to the idea of place. See de las Rivas, J.L. (1992) *El espacio como lugar: sobre la naturaleza de la forma urbana*. Valladolid: Universidad de Valladolid.

150 See Indovina, F. (1972) *Lo spreco edilizio*. Vencie: Marsilio; and Campos Venuti, G. (1978) *Urbanistica e austerità.* Milan: Feltrinelli.

151 Falini, P. (1997) *I territori della riqualificazione urbana*. Rome: Officina..

152 Cervellati, P.L., Scannavini, R., and De Angelis, C. (1977) *La nuova cultura delle citta' : la salvaguardia dei centri storici, la riappropriazione sociale degli organismi urbani e l'analisi dello sviloppo territoriale nell'esperienza di Bologna*. Milan: Mondadori.

153 Campos Venuti, G. (1990) L'urbanistica riformista a Bologna dalla ricostruzione all'espansione. In: W.Tega. ed. *Storia illustrata di Bologna V*. Milan: Nuova editoriale AIEP

154 See Campos Venuti, G. (2000) *Territorio*. Bologna: CLUEB; Álvarez Mora, A. and Castrillo Romón, M.A. (2004) *Urbanismo: homenaje a Giuseppe Campos Venuti*. Valladolid: Universidad de Valladolid.

155 For a general explanation, see Troitiño Vinuesa, M.A. (1992) *Cascos antiguos y centros historicos : problemas, políticas y dinámicas urbanas.* Madrid: MOPT-DGPTU.

156 Del Vigo, J. (1990) *Arte y urbanismo en el Casco Viejo de Bilbao*. Bilbao: Ayuntamineto de Bilbao.

157 It is impossible to think about an urban renaissance or rebirth without considering unfortunate events. Aingeru Zabala and Marta Ibarbia briefly describe what was accomplished in Bilbao *Casco Viejo* (Old Town). See Fundación Metrópoli (2002) *Euskal Hiria*. Vitoria-Gasteiz: Servicio Central de Publicaciones del Gobierno Vasco.

158 See Gobierno Vasco y Diputación Foral de Bizkaia (1994) *Bilbao Metropolitano, la propuesta. Plan Territorial Parcial Bilbao Metropolitano*. Bilbao: Gobierno Vasco / Diputación Foral de Bizkaia; and Cenicacelaya, J. Román, A. & Saloña, I. (2001) *Bilbao 1300-2000: hiri ikuspegia*. Bilbao: Colegio Oficial de Arquitectos Vasco-Navarro. The magazine Bilabo Ría 2000 published by the organisation bearing the same name allows a precise understanding of the urban transformation accomplished thus far throughout its over 20 issues.

159 Lee Kuan Yew World Cities Prize, 2010. In that same year, the city was selected at the Shanghai World Expo. The exhibition presented a large interactive model made with the collaboration of Design LAAB (Fundación Metrópoli).

160 Jacobs, J. (1961) *The Death and Life of Great American Cities.* New York: Random House.

161 See Breines, S. and Dean, W.J. (1974) *The Pedestrian Revolution: Streets without Cars.* New York: Vintage Books; Pushkarev, B. and Zupan, J.M. (1975) *Urban Space for Pedestrians*. Cambridge, MA: MIT Press; Brambilla, R. and Longo, G. (1977) *For Pedestrians Only: Planning, Design, and Management of Traffic-Free Zones*. New York: Whitney Library of Design; and Whyte, W.H. (1988) *City: Rediscovering the Center*. New York: Doubleday.day.

162 See Frieden, B.J. and Sagalyn, L.B. (1991) *Downtown, Inc.: How America Rebuilds Cities*. Cambridge, MA: MIT Press. The book excellently describes the urban renewal process in cities such as Boston and Baltimore. See also Vegara, A. (1987) El renacimiento del Corazón de Baltimore. *Urbanismo*, No. 2.



163 Harvey, D. (2000) *Spaces of Hope*. Berkeley: University of California Press..

164 Hardwick, M.J. (2004) *Mall Maker: Victor Gruen, Architect of an American Dream.* Philadelphia: University of Pennsylvania Press.

165 There is a Downtown Association where the organisations created with the purpose of revitalising and renewing these places in the city belong to. There is also a foundation devoted to improving the competitiveness of the inner city. Generally, the economic revitalisation of urban centres was a priority in North America in the last two decades of the 20th century. This included policies that remain alive but have been incorporated into the wider objective of making cities more liveable such as sustainability, the fight against climate change, economic and social vitality, and equity in public service access. See Platt, R.H. (2006) *The Humane Metropolis: People and Nature in the 21st Century City*. Amherst: University of Massachusetts Press and Lincoln Institute of Land Policy.

166 Gratz, R.B. and Mintz, R. (1998) *Cities Back from the Edge: New Life for Downtown*. New York: Wiley.

167 Gary Hack, a prestigious urban planner who was dean of the Pennsylvania School of Design served for some time as president of the City Planning Commission,

168 The 2005 park was designed by James Corner Field Operations and architects Diller Scofidio + Renfro, with a landscaping and planting project by Dutch landscape architect Piet Oudolf and engineering firm Buro Happold. See Goldberger, P. (2011) Miracle Above Manhattan: New Yorkers Can Float over Busy Streets in an Innovative Park. *National Geographic*, April.

## 06. STRATEGIC PLANS AND URBAN TRANSFORMATION

169 Camagni, R. (2005) *Economía urbana*. Barcelona: Antoni Bosch. Camagni insisted on the precariousness of the space economy but after recalling Braudel's aphorism that "a city is a city," he provided an explanation of his 'organising principles' that allow the city to be thought of in terms of an 'autonomous socioeconomic entity'; agglomeration or synergy, accessibility or competition, interaction, spatial hierarchy, competitiveness, land rent, sustainable development, etc. ending with the evolution of urban-regional policies and plans.

170 See Dumont, G.F. (1993) *Économie urbaine. Villes et territoires en competition*. Paris: Litec; and Morandi, C. (1993) *I vantaggi competitivi delle città: un confronto in ambito europeo*. Milan: Franco Angeli.

171 The economy of the city continues to arouse great interest, with diverse theories examining the importance of the city as a socioeconomic subject. The success of works such as 'Triumph of the City' which are easy to understand and aimed at a general audience confirm this. See Glaeser, E. (2011) *Triumph of the City: How Our Greatest Invention Makes Us Richer, Smarter, Greener, Healthier, and Happier*. New

York: Penguin Press. This book describes cities as making "listening, observing, and learning easier," broadening the idea of the city as an innovation space to highlight the importance of human capital and good governance as factors that play a greater role in determining a city's prosperity rather than its infrastructures.

172 Jacobs, J. (1984) *Cities and the Wealth of Nations: Principles of Economic Life*. New York: Random House. It examines the role of cities compared to states in the economy and the development of civilisation.

173 Hall, P. (1998) *Cities in Civilization*. London: Weidenfeld & Nicolson.

174 Landes, D.S. (1998) *The Wealth and Poverty of Nations: Why Some are So Rich and Some So Poor*. New York: Norton. Landes follows the North American pragmatist tradition in investigating the reasons for inequality.

175 Healey, P. (2010) *Making Better Places: The Planning Project in the Twenty-First Century*. Basingstoke: Palgrave Macmillan. The book's brief preface is an eloquent reflection on the nature of spatial planning.

176 Palermo, P.C. (2009) *I limiti del possible: Governo del territorio e qualità dello sviluppo*. Rome: Donzelli.

177 Since 1993, this technique has spread from Spain to Latin America, driven by Barcelona's success and led by the CIDEU – *Centro Iberoamericano de Desarrollo Estratégico Urbano* (Latin American Centre for Urban Strategic Development).

178 See Güell, J.M.F. (1997) *Planificación estratégica de ciudades.* Barcelona: Gustavo Gili; and de Forn i Foxà, M. and Pascual i Esteve, J.M. (1995) *La planificació estratègica territorial : aplicació als municipis*. Barcelona: *Diputació de Barcelona.*

179 Definitions in Freije Uriarte, A. (1990) *Estrategia y políticas de empresa*. Bilbao: Deusto. pp. 23-24.

180 From Forn i Foxà and Pascual i Esteve's, *'La planificació estratègica territorial*', the definition is by R.L. Ackoff, theorist of applied research.

181 It is worrying to see how many specialists involved in the planning process are unaware of the nature of planning itself. There are different forms of planning and the planning model itself is not absolute or sanitised. See Friedmann, J. (2001) *Planificación en el ámbito público*. Madrid: Instituto Nacional de Administración Pública.

182 Benévolo, L. (1985) *La ciudad y el arquitecto.* Barcelona: *Paidós.* p. 35.

183 Baudrillard, J. (1982) The Beaubourg-Effect: Implosion and Deterrence. Translated by R. Krauss and A. Michelson. *October*, Vol. 20, Spring, pp. 3-13.

184 Monclús, J. (2006) *International Exhibitions and Urbanism: The Zaragoza Expo 2008 Project*. Surrey: Ashgate.

185 The classic reference is Ludwig von Bertalanffy's 'General System Theory', a theory that is making a comeback due to holistic environmental aspirations. See Bertalanffy, L. (1968) *General System Theory: Foundations, Development, Applications*. New York: George Braziller.



186 Consider, for example, sound explanations such as that made by William Alonso. See Alonso, W. (1964) *Location and Land Use: Toward a General Theory of Land Rent*. Cambridge, MA: Harvard University Press; and McLoughlin, J.B. (1969) *Urban and Regional Planning: A Systems Approach*. London: Faber and Faber.

187 Huet, B. (1984) La città come spazio abitabile, alternative alla Carta di Atene. *Lotus*, no. 41, pp.6-17. The *projet urbain* idea evolved and became an urban strategy, as verified for example in de Saintignon, P. (2005) *Un nouvel art de ville : Le projet urbain de Lille*. Lille: Ville de Lille.

188 See Aymonino, C. (1975) *Il significato delle città.* Rome: Laterza.Vittorio Gregotti had already proposed this idea in 1972. See Gregotti, V. (1996) *Inside Architecture*. Translated by P. Wong and F. Zaccheo. Cambridge, MA: MIT Press. Architecture would be able to transcend the urban scale and figuratively reestablish the whole cultural model that we can define as a total environment. Gregotti resorts to what he terms the 'settlement principle'. This is an almost forgotten contextual idea that is nevertheless still relevant, shared by other Italian architects such as G. Samoná and E.N. Rogers. Contextualism nevertheless requires a more open environmental and functional review of the urban role of architecture, as introduced by Stan Allen with his idea of 'field' or as William J. Mitchell poses with his idea of 'recombinant architecture' which is discussed in Chapter 9. See Allen, S. (1997) From Object to Field. *Architectural Design*, vol. 67, no. 5-6, pp.24-31.

189 Mangin, D. and Panerai, P. (1999) *Projet Urbain*. Marseille: Parenthèses.

190 Healey, *Making Better Places*. p. 17

## 07. THE CITY-REGION

191 These are ideas he shares with Elisée Réclus and Paul Vidal de La Blache, the pioneers of regional geography. Geography's concept of the region is broad and applicable in diverse situations. 'Region' is derived from *'regio'* the straight line which Roman augurs drew to delimit spaces in the sky. We often talk about natural, historical, geographical, or administrative regions; but the concept of region has a specific definition in geography. Its polysemy allows us to associate it with the city, without disrupting other territorial interpretations. See Valcarcel, J.O. (2000) *Los horizontes de la geografia: teoria de la geografia*. Barcelona: Ariel.

192 Katz, B., ed. (2000) *Reflections on Regionalism*. Washington: Brookings Institution Press.

193 Geddes, P. (1925) The Valley in the Town (the Fourth of the Talks from the Outlook Tower). *Survey Graphic*, 54, July, p. 400. Even in Frank Lloyd Wright's decentralised city-region of Broadacre City, the influence of Geddes' triad concept of 'place-work-folk' is apparent.

194 "Our survey, then, is a means towards the realisation of our community's life-history. This life-history is not past and done with; it is incorporated with its present activities and character. All these again, plus such fresh influences as may arise or intervene, are determining its opening future. From our survey of facts we have to prepare no mere material record, economic or structural, but to evoke the social personality, changing indeed so far with every generation yet ever expressing itself in and through these." See Geddes, Patrick, 1915. *Cities in Evolution. An Introduction to the Town Planning Movement and to the Study of Civics.* London: Williams & Norgate. p. 363. On Geddes' region concept see V.M. Walter & I.B. Whyte.

195 Mumford, L. (1956) *The Urban Prospect*. London: Secker & Warburg.

196 See Luccarelli, M. (1995) *Lewis Mumford and the Ecological Region: The Politics of Planning*. New York: Guilford Press; and Wojtowicz, R. (1998) *Lewis Mumford and American Modernism: Eutopian Theories for Architecture and Urban Planning*. Cambridge: Cambridge University Press.

197 Mumford, L. (1931) *Technics and Civilization.* London: Routledge & K. Paul.

198 The third wave of urbanisation was upon a services society, rooted in the processes of flexible organisation, human and social qualification, and creativity, influencing the location of innovation and production activities. Toffler, A. (1980) *The Third Wave*. London: Pan Books.

199 Hall, P. (1985) Capitales nacionales, ciudades internacionales y la nueva división del trabajo. *Estudios Territoriales*, no. 19, p. 21-30.

200 On counter-urbanisation, see Berry, B.J.L., ed. (1976) *Urbanization and Counter-Urbanization*. Beverly Hills: SAGE Publications. A classic on urban decline theory is Clark, D. (1989) *Urban Decline*. London: Routledge. On the theory of spatial cycles, i.e. urbanisation, suburbanisation, redevelopment and reurbanisation, see Van den Berg, L. (1986) *Urban Systems in a Dynamic Society*. Aldershot: Gower.

201 The concept of the 'functional region' has prevailed in urban planning. For example the concept can be seen in complex ideas such as François Ascher's 'Metapolis' which is defined by urban interactions within the territory. When discussing the different perspectives of the concept of a 'region', regional geographers such as Manuel de Terán mention the idea of a 'region plan', a territory that is delimited by the specific planning goals in a given context. See de Terán, M. and Solé i Sabarís, L. (1968) *Geografía regional de España.* Barcelona: Ariel.

202 Regional analysis, with its quantitative methodology focused on urban economic dimensions has been crucial in analysing urban spaces. Prominent figures such as David Clark, Walter Isard, William Alonso, Torsten Hägerstrand, and Melvin Webber have developed explanatory models that incorporate population, labour, land use, transportation and services within the city. These models provide 'objective' explanations of urban systems. Briefly, the ongoing debate in this field provides useful ideas in interpreting the city. For example, Nobel Prize winner Paul Krugman examines the 'self organising economy', i.e. spontaneous organisation of the economy through the complexity of the contemporary urban region, 'edge cities' where the coexistence of agglomeration and diffusion forces characterise the polycentric location of activities. See Krugman, P (1995) *The Self-Organizing Economy*. Cambridge, MA: Blackwell Publishers; and Roca Cladera, J. and Marmolejo Duarte, C.R. (2006) Hacia un modelo de aglomeración y desaglomeración del espacio regional urbano, Krugman revisitado. *ACE: Arquitectura, Ciudad y Entorno,* vol. 1, no. 1.

203 CEMAT (1983) Resolution No. 2 on the European Regional/Spatial Planning Chapter (Torremolinos Charter). The European 6th Conference of the Council of Europe of Ministers Responsible for Spatial Planning.

204 Patrick Abercrombie who published the famous manual 'Town and Country Planning' in 1933 had earlier written 'The Preservation of Rural England' which states that one of the keys of metropolitan regional planning is the integration of rural areas in the planning process. See Abercrombie, P. (1926) The Preservation of Rural England. London: Hodder and Stoughton.

205 Between 1925 and 1930, Ernst May promoted metropolitan urban planning in Frankfurt through his *Trabaten Prinzip*. This was an organised concept of a polycentric urban model, articulated by a park system run by the landscape architect Leberecht Migge. See Haney, D.H. (2010) *When Modern was Green: Life and Work of Landscape Architect Leberecht Migge*. New York: Routledge.

206 Monclús, F.J. (1988) *La ciudad dispersa. Suburbanización y nuevas periferias*. *Barcelona: Centre de Cultura Contemporània de Barcelona.*

207 Indovina, F. (2007) La metropolización del territorio: nuevas jerarquías territoriales. In: A. Font Arellano, ed. *La explosión de la ciudad : transformaciones territoriales en las regiones urbanas de la Europa Meridional*. Madrid: Ministerio de Vivienda. p. 20-49.

208 The 'megaregion' concept was proposed in North America by the 'America 2050' platform, an initiative of the Regional Plan Association led by Robert Yaro, who participated in the workshops with Fundación Metrópoli.

209 European Commission Directorate-General for Regional and Urban Policy (2007) *State of European Cities Report: Adding Value to the European Urban Audit*. Brussels: Office for Official Publications of the European Communities. Different European programmes such as URBACT demonstrate the EU's interest in cities, despite the lack of specific responsibilities in urban policies.

210 There is an evolution toward regional policies in the European Union. The Europe 2000 programme began with economic and social cohesion and the creation of an internal market. A report, 'Europe 2000: Outlook for the Development of the Community's Territory' was published in 1991. This was followed in 1994 by the publication of the report 'Europe 2000+' and the approval in 1999 for the European Territorial Strat-

egy (ETS) which is currently being renewed through the ESPON programme. See European Commission Directorate-General for Regional and Urban Policy (1991) *Europe 2000: Outlook for the Development of the Community's Territory.* Luxembourg: Office for Official Publications of the European Communities; and European Commission Directorate-General for Regional and Urban Policy (1994) *Europe 2000+: Cooperation for European Territorial Development*. Luxembourg: Office for Official Publications of the European Communities.

211 Camagni, R. and Tarroja, A., eds. (2006) *Una nueva cultura del territorio. Criterios sociales y ambientales en las políticas y el gobierno del territorio*. Barcelona: Diputación de Barcelona.

212 To understand planning in the Netherlands, Andreas Faludi and Arnoud van der Valk's work is a useful reference. See Faludi, A. and Van der Valk, A. (1994) *Rule and Order: Dutch Planning Doctrine in the Twentieth Century*. Dordrecht: Springer.

213 European Commission (2011) *Territorial Agenda of the European Union 2020: Towards an Inclusive, Smart and Sustainable Europe of Diverse Regions*, agreed at the Informal Ministerial Meeting of Ministers responsible for Spatial Planning and Territorial Development on 19 May, Gödöllő, Hungary. Available at: <https://ec.europa.eu/regional_policy/sources/policy/what/territorial-cohesion/territorial_agenda_2020.pdf>

214 The Guidelines for the Territorial Planning of the Basque Country (*Directrices de Ordenación Territorial de la Comunidad Autónoma del País Vasco*) document drafted by the Ideas workshop under the direction of Alfonso Vegara was initially approved in 1993 and fully approved in 1997. The document was 'Highly Commended' at the European Urban and Regional Planning Awards 1994, organised by the European Council of Spatial Planners.

215 Fundación Metrópoli (2002) Euskal Hiria. Vitoria-Gasteiz: Servicio Central de Publicaciones del Gobierno Vasco.

216 Fundación Metrópoli (2002) Euskal Hiria.NET. Madrid: Fundación Metrópoli.

217 This was the first regional planning experience in Castile and León, conducted by the University Institute of Urban Studies, University of Valladolid. The document was approved in 2001. See De Las Rivas, J.L. (1998) *Avance de Directrices de Ordenación del Territorio de Valladolid y Entorno*, Junta de Castilla y León. Valladolid: Instituto Universitario de Urbanística, University of Valladolid.

218 The scope of these guidelines includes the territory within the large space at the confluence of the Pisuerga and Duero rivers.

219 The Territorial Guidelines for Valladolid won an award at the 4th European Urban and Regional Planning Award in 2002, organised by the European Council of Spatial Planners. See De Las Rivas, J.L. (2001) *La ordenación de ls procesos metropolitanos: las directrices de ordenación terrritorial de Valladolid y su entorno*. In: Vinuesa Angulo, J. and Galiana Martín, L., eds. (2010) Teoría y práctica para una ordenación racional del territorio. Madrid: Síntesis.

220 Fundación Metrópoli (2011) *Bintan Eco Island, Indonesia*. Madrid: Fundación Metrópoli.

221 Financiera del Desarrollo Territorial, Fundación Metrópoli and Microsoft Corporation (2014) *Diamante: Caribe & Santanderes. Vol. 1 and 2.* Bogotá: Fundación Metrópoli.

## 08. ECO-URBANISM

222 Scandurra, E. (1996) *L'ambiente dell'uomo :Verso il progetto della città sostenibile.* Milan: Etaslibri.

223 Meadows, D.H., Meadows, D.L., Randers, J. and Behrens III, W.W. (1972) *The Limits to Growth: A Report for the Club of Rome's Project on the Predicament of Mankind*. New York: Universe Books. A sequel was published. Meadows, D.H., Meadows, D.L. and Randers, J. (1992) *Beyond the Limits: Global Collapse or a Sustainable Future*. London: Earthscan.

224 See Carson, R. (1962) *Silent Spring*. Boston: Houghton Mifflin; and Commoner, B. (1971) *The Closing Circle: Nature, Man, and Technology*. New York: Knopf. Carson's book provides a compelling narrative and evidence of the effects of pesticides on our environment, and the obligation of citizens and the right to know. Commoner's book discusses the interconnectedness of everything. It was a pioneering study that created new awareness and a more accurate and contemplative perspective of nature. This book complemented the work of scientists such as Ilya Prigogine and James Lovelock's Gaia hypothesis.

225 Schumacher, E.F. (1973) *Small is Beautiful: A Study of Economics as if People Mattered*. London: Blond and Briggs.

226 The World Commission on Environment and Development chaired by former Norwegian Prime Minister Gro Harlem Brundtland was set up in 1983 to establish 'a global agenda for change'. The report set the guidelines for the programme for change. See World Commission on Environment and Development (1987) *Our Common Future*. Oxford: Oxford University Press. A subsequent report 'Caring for the Earth' was jointly published by IUCN (The World Conservation Union), UNEP (United Nations Environment Programme), and WWF (World Wide Fund for Nature) in 1991. This report defined sustainable development as "improving the quality of human life while living within the carrying capacity of supporting eco-systems." At the Earth Summit in Rio in 1992, Principle 3 of the Rio Declaration stated that "the right to development must be fulfilled so as to equitably meet developmental and environmental needs of present and future generations." At the Rio Summit, the Rio Declaration was internationally accepted and signed by over 175 countries while Agenda 21, an action plan on sustainable development was also unveiled.

227 European Commission (1997) *Hacia un desarrollo sostenible*. Luxembourg: Publications Office of the European Union.

228 Evernden, N. (1992) *The Social Creation of Nature*. Baltimore: Johns Hopkins University Press.

229 The then governor of Tokyo, Yukio Aoshima proposed a pioneering 'Action Plan for the Creation of an Eco-Society' in 1998.The plan had five sections: resources and recycling, water recycling, energy, transport demand management, and environmental education. The response to a city's environmental problems were based on three principles: the 'principle of action' (it is necessary to act and confront the problems, rather than just discussing them, in favour of conservation and restoration of the environment), the 'principle of comprehensive response' (based on science but above all on the collaboration and commitment of citizens together with prevention, management and solution goals), and the 'principle of partnership' (at all scales and levels). See Inoguchi, T., Newman, E. and Paoletto, G., eds. (1999) *Cites and the Environment: New Approaches for Eco-Societies*. Tokyo: United Nations University Press.

230 Since the publication of a set of environmental indicators by the Ministry of Environment in Spain in 1996, various other related initiatives have been developed. Two in particular are highlighted here – the 'Municipal System of Sustainability Indicators' (*Sistema municipal de indicadores de sostenibilidad*) and the 'System of Indicators and Conditions for Large- and Medium-Sized Cities' *(Sistema de indicadores y condicionantes para ciudades grandes y medianas*) developed by BCN Ecología in 2010. The indicators are quantitative measures to monitor and evaluate the actual situation and assess changes. The OECD proposed a system of causally organised indicators: pressure, state, and response. Indicator systems can integrate environmental factors into sectoral policies (organised by trend, impact, and economic indicators) or integrate environmental factors into economic policy (guided by environmental accounting). In urban areas, the different environmental aspects such as climate, waste, and water converge.

231 See Platt, R.H. (2006) *The Humane Metropolis: People and Nature in the 21st Century City*. Amherst: University of Massachusetts Press and Lincoln Institute of Land Policy; and Newman, P. and Jennings, I. (2008) *Cities as Sustainable Ecosystems: Principles and Practices.* Washington, DC: Island Press. The concept of 'resilience' applied to urbanism reaffirms the idea of a sustainable city having real (and systemic) capacity to adapt to change, and not just adverse circumstances. See Newman, P., Beatley, T. and Boyer, H. (2009) *Resilient Cities: Responding to Peak Oil and Climate Change*. Washington, DC: Island Press.

232 Rueda Palenzuela, S. (2002) *Barcelona, a Compact and Complex Mediterranean City: A More Sustainable Vision for the Future*. Barcelona: Barcelona City Council.

233 Mackaye, B. (1940) Regional Planning and Ecology. *Ecological Monographs, vol. 10, no. 3*.



234 Odum, E.P. (1953) *Fundamentals of Ecology*. Philadelphia: Saunders; and Odum, E.P. (1989) *Ecology and Our Endangered Life-Support Systems*. Sunderland, Mass: Sinauer Associates.

235 McHarg, I.L. (1969) *Design with Nature*. New York: Natural History Press. Robert Fishman points out that Jane Jacobs' defence of the traditional city and McHarg's position on natural processes opposes the logic of thought and urban development that reduced a complex system to destructive simplicity. Jacobs and McHarg created a 'language' in the 1960s that would unite urban planners and environmentalists in the 1970s. See Fishman, R. (2000) The Death and Life of American Regional Planing. In: B. Katz, ed. *Reflections on Regionalism*. Washington, DC: Brookings Institution Press.

236 Thompson, G.F. and Steiner, F.R., eds. (1997) *Ecological Design and Planning*. New York: John Wiley & Sons; and Bettini, V., Peinado Lorca, M., *García Montero,* L.G. (1998) *Elementos de ecología urbana*. Madrid: Trotta.

237 Forman, R.T.T. and Godron, M. (1986) *Landscape Ecology*. New York: Wiley. Landscape ecology incorporates useful knowledge into the planning process that is aimed at understanding natural processes and enhancing biodiversity, recognising the elements that determine the shape and functions of ecosystems (niches, borders, corridors, and mosaics). It displays components of physical planning, e.g. formal patterns, boundaries, networks, and their connectivity. See Forman, R.T.T. (1995) *Land Mosaics: The Ecology of Landscapes and Regions*. Cambridge: Cambridge University Press.

238 Næss, A. (1988) *Ecology, Community and Lifestyle: Outline of an Ecosophy*. Translated from Norwegian and edited by D. Rothenberg. Cambridge: Cambridge University Press.

239 Hewitt, N. (1995) *European Local Agenda 21 Planning Guide: How to Engage in Long-Term Environmental Action Planning Towards Sustainability*. Freiburg: ICLEI European Secretariat.

240 See City of Vancouver (2012) *Greenest City: 2020 Action Plan*. Vancouver: City of Vancouver. The City of Vancouver introduced this plan aimed at fighting climate change which includes a food management programme. One of the few robust studies on the ecological footprint of cities that offer a complete perspective of urban metabolism is the Ecological Footprint for the Twin Cities. See San Martin, I. and Xu, S. (2010) *Ecological Footprint for the Twin Cities: Impacts of Consumption in the 7-County Metro Area*. Minneapolis, MN: UMN Metropolitan Design Center.

241 The European Union has promoted studies on the urban environment, supported by applicable case studies. For example, see Gaffron, P., Huismans, G. and Skala, F., eds. (2005), Ecocity: Urban Development Towards Appropriate Structures for Sustainable Transport (2002-2005). Vienna: Vienna Facultas Verlags; and European

Environment Agency (2009) *Ensuring Quality of Life in Europe's Cities and Towns: Tackling the Environmental Challenges Driven by European and Global Change*. Luxembourg: Office for Official Publications of the European Communities.

242 European Council of Spatial Planners (2002) *Try It This Way: Sustainable Development at the Local Level*. Brussels: ECTP-CEU.

243 Vernetti, G. (1990) La città come ecosistema territoriale. In: A. Magnaghi, ed. *Il territorio dell'abitare. Lo sviluppo locale come alternativa strategica*. Milan: Franco Angeli.

244 European Council of Town Planners (2003) *The New Charter of Athens 2003: The European Council of Town Planners' Vision for Cities in the 21st Century*. Città di Castello: Alinea Editrice.

245 See Bosselman, F.P. and Callies, D.L. (1972) *The Quiet Revolution in Land Use Control*. Washington: Council on Environmental Quality. This report introduced growth management which eventually became a consolidated system of territorial planning strategies and practices.

246 Katz, B. ed. (2000) *Reflections on Regionalism*. Washington, DC: Brookings Institution Press.

247 Abbott, C., Howe, D.A. and Adler, S. (1994) *Publishing the Oregon Way: A Twenty-Year Evaluation*. Corvallis, OR: Oregon State University Press.

248 See Porter, D.R. (1997) *Managing Growth in America's Communities*. Washington: Island Press; DeGrove, J.M., ed. (1991) *Balanced Growth: A Planning Guide for Local Government*. Washington, DC: International City/County Mangaement Association; Stein, J.M. (1993) *Growth Management: The Planning Challenge of the 1990s*. Newbury Park, CA: Sage Publications; and San Martin, I. (1996) *Growth Management Strategies for Multiple Land Uses*. Tempe, AZ: Arizona State University.

249 See Calthorpe, P. (1993) *The Next American Metropolis: Ecology, Community and the American Dream*. New York: Princeton Architectural Press; Calthorpe, P. and Fulton, W.B. (2001) *The Regional City: Planning for the End of Sprawl*. Washington, DC: Island Press; Suzuki, H., Cervero, R. and Iuchi, K. (2013) *Transforming Cities with Transit: Transit and Land-Use Integration for Sustainable Urban Development*. Washington, DC: World Bank.

250 1998. *Smart Growth. Economy, Community, Environment.* Washington DC: Urban Land Institute.

251 Urban Land Institute (1998) *Smart Growth: Economy, Community, Environment*. Washington, DC: Urban Land Institute.

252 Morin, E. (1988) *L'Écologie génèralisée*. Paris: Seuil.

253 Hough, M. (1995) *Cities and Natural Process*. London: Routledge.

254 See Mostafavi, M. and Doherty, G. (2010) *Ecological Urbanism*. Baden: Lars Müller Publishers; and Palazzo, D. and Steiner, F.R. (2012) *Urban Ecological Design: A Process for Regenerative Places*. Washington, DC: Island Press.

255 Kroll, L. (1997) *Bio Psycho Socio Eco 1: Ecologies urbaines*. Paris: L'Harmattan.



256 Foletta, N. and Field, S. (2010) *Europe's Vibrant New Low Car(bon) Communities*. New York: Institute for Transportation & Development Policy (ITDP).

257 Kurokawa, Kisho (1991) *Intercultural Architecture: The Philosophy of Symbiosis*. London: Academy Ed.

258 Rogers, R. (1997) *Cities for a Small Planet*. London: Faber & Faber. For a recent and clear review of sustainable urbanism, see Haas, T., ed. (2012) *Sustainable Urbanism and Beyond: Rethinking Cities for the Future*. New York: Rizzoli.

259 Kelbaugh, D., ed. (1989) *The Pedestrian Pocket Book: A New Suburban Design Strategy*. New York: Princeton Architectural Press. This book was a summary of output from a student workshop. It was preceded by Van Der Ryn, S. and Calthorpe, P. (1986) *Sustainable Communities: A New Design Synthesis for Cities, Suburbs, and Towns*. San Francisco: Sierra Club Books.

260 See Duany, A., Plater-Zyberk, E. and Speck, J. (2000) *Suburban Nation: The Rise of Sprawl and the Decline of the American Dream*. New York: North Point Press. This book ends with the 'Charter of the New Urbanism'. See Flint, A. (2006) *This Land: The Battle Over Sprawl and the Future of America*. Baltimore: Johns Hopkins University Press. Anthony Flint relates the experience of the New Urbanism, smart growth, and green building movements in the fight against the sprawl of the suburban model.

261 The New York magazine Architecture refers to Andrés Duany as the 'evangelist' in its May 2000 issue that focuses on the power of architects.

262 Vincent Scully highlights how New Urbanism projects continue to belong in the suburban world. However, the main idea is of 'community' founded on a new concept of pedestrianisation since the car is the cause of the fragmented urban community. There are residential neighbourhoods that are attractive to investors, but Scully questions if it is possible to make money by building communities for the poor. The ideas of New Urbanism are attractive in diverse social and urban contexts. New Urbanism is relevant not for its originality as it uses many borrowed concepts, but for its integration of ideas. See Scully, V. (1994) The Architecture of Community. In: P. Katz, *The New Urbanism: Toward an Architecture of Community*. New York McGraw-Hill.

263 See Nolen, J. (1998) *New Towns for Old: Achievements in Civic Improvement in Some American Small Towns and Neighbourhoods*. London: Routledge; and Rogers, M.F. (2001) *John Nolen and Mariemont: Building a New Town in Ohio*. Baltimore: Johns Hopkins University Press. Rogers' book is a study of New Urbanism's direct precedent.

264 The 1988 exhibition 'Denatured Visions: Landscape and Culture in the Twentieth Century' at the Museum of Modern Art, New York was a turning point. See Wrede, S. and Adams, W.H., eds. (1988) *Denatured Visions: Landscape and Culture in the Twentieth Century*. New York: Museum of Modern Art. On North American landscape culture, see Walker, P. and Simo, M.L. (1994) *Invisible Gardens: The Search for*

*Modernism in the American Landscape*. Cambridge, MA: MIT Press. For a broader perspective, see Treib, M., ed. (1994) *Modern Landscape Architecture: A Critical Review*. Cambridge, MA: MIT Press.

265 Frederick Law Olmsted articulated his ideas in an address to the American Social Science Association in 1870 titled 'Public Parks and the Enlargement of Towns'. See Rybczynski, W. (1999) *A Clearing in the Distance: Frederick Law Olmsted and America in the Nineteenth Century*. New York: Scribner.

266 See Smithson, R. (1973) Frederick Law Olmsted and the Dialectical Landscape. In: N. Holt, ed. 1979. *The Writings of Robert Smithson: Essays with Illustrations*. New York: New York University Press.

267 See Corner, J., ed. (1999) *Recovering Landscape: Essays in Contemporary Landscape Architecture*. New York: Princeton Architectural Press. An exemplary work on the renaissance of the landscape was produced for Barcelona's First Landscape Architecture Biennial in 1999. See Franch, M, Mogilnicki, A. and Illanes, C., ed. (1999) *Rehacer paisajes : arquitectura del paisaje en Europa, 1994-1999 : catálogo de la 1a Bienal de paisaje 1999.* Barcelona: *Fundación Caja de Arquitectos.* On the evolution of urban design towards the landscape in Spain, see De Las Rivas, J.L. (2012) Spain. In: S. Loew, ed. *Urban Design Practice: An International Review*. London: RIBA Publishing

268 See Waldheim, C., ed. (2006) *The Landscape Urbanism Reader*. New York: Princeton Architectural Press. Waldheim states that the concept of Landscape Urbanism first gained momentum at the Landscape Urbanism Conference held in April 1997 at the Graham Foundation in Chicago.

269 There are many architectural publications that have been published which identify contemporary urbanism with small- or medium-scale interventions in public spaces. However, there are few landscape projects that aim to address urban issues as a whole. See Collectif (2012) *La ville aujourd'hui, nouvelles tendances en urbanisme*. Paris: Place des Victoires.

270 At the Congress for the New Urbanism held in Madison, Wisconsin in 2011, a debate arose between Charles Waldheim and Andres Duany, among the most important representatives of Landscape Urbanism and New Urbanism respectively. Waldheim argued that Lafayette Park, a residential complex designed by Mies van der Rohe and Ludwig Hilberseimer on the outskirts of Detroit in 1953 and completed in 1963 fulfils many of the objectives of New Urbanism. Duany responded by borrowing from Jane Jacobs and stating that the residential complex lacked life both in its streets and in its interior park and questioned the landscape architect's prejudice against sanitation pipes and excessive use of Photoshop. Waldheim replied, criticising New Urbanism's retro aesthetics. Perhaps a 'pragmatic' broad shared cultural project that is not an eclectic syncretism is possible, which an American culture would defend. See Steuteville, R. (2011) Street fight: Landscape Urbanism versus New Urbanism. *Public Square. A CNU Journal* [online] 9 June. Available at: < https://www.cnu.org/publicsquare/2011/06/09/street-fight-landscape-urbanism-versus-new-urbanism>.

271 See the European Green Capital website: <https://ec.europa.eu/environment/europeangreencapital/index_en.htm>

272 The principles of the sustainable city have evolved towards a broader and more complex concept of a 'healthy city'. The healthy city includes both a comprehensive interpretation of the eco-system and an aspiration for health for a city's citizens, linked to equal access to urban and social services. See Land Use Consultants in association with the Centre for Research into Environment and Health (2007) *Delivering Healthier Communities in London*. London: HUDU; and Dannenberg, A.L., Frumkin, H. and Jackson, R., eds. (2011) *Making Healthy Places: Designing and Building for Health, Well-Being, and Sustainability.* Washington, DC: Island Press.

## 09. DIGITAL CITY, SMART CITY

273 Bell, D. (1973) *The Coming of the Post-Industrial Society: A Venture in Social Forecasting*. New York: Basic Books.

274 Bell (1973) *The Coming of the Post-Industrial Society*. The concept of the knowledge society first appears in an article by R.E. Lane in 1966. See Lane, R.E. (1966) The decline of politics and ideology in a knowledgeable society. *American Sociological Review*, 31, 649-662.

275 Bell (1973) *The Coming of the Post-Industrial Society*. This is why the political system cannot only be technocratic. Politics must be the arbitrator with the emergence of a communal society where profit maximisation or individual utility is not the only aim but where social goals and priorities are clearly defined with systems established to achieve these goals based on social well-being and community interest. As Nobel Laureate Robert Solow had anticipated, productivity growth from the 1950s was a result of a 'statistical residual'. This residual, later named the Solow residual was the combined incorporation of science, technology and information management into productive processes. According to Solow, the only solution was to invest in human capital.

276 McLuhan, E. and Zingrone, F., eds. (1995) *Essential McLuhan*. New York: Basic Books.

277 Hugo, V. (1917) *z*. Book V, Chapter II. Cambridge, MA: Harvard Classics Shelf of Fiction.

278 Feld, B. (2012) *Startup Communities: Building an Entrepreneurial Ecosystem in Your City*. Hoboken, NJ: John Wiley & Sons.

279 Rogers, R. (1997) *Cities for a Small Planet*. London: Faber & Faber.

280 Toffler, A. (1980) *The Third Wave*. London: Pan Books.

281 Castells, M. (1989) *The Informational City: Information Technology, Economic Restructuring and the Urban-Regional Process*. Oxford: Basil Blackwell; and Castells, M. (1998) *La era de la información : economía, sociedad y cultura*. Madrid: Alianza Editorial.

282 Webber, M.M. (1964) The Urban Place and the Nonplace Urban Realm. In: M.M. Webber, ed. *Explorations into Urban Structure*. Philadelphia: University of Pennsylvania Press. See Ciduades (2013) *¿El centro en otro lugar? Centralidades urbanas, polaridades territoriales*. Valladolid: Instituto Universitario, De Urbanistica.

283 Dupuy, G. (1985) *Systèmes, réseaux et territoires*. Paris: Ed. Presses del'ENPC.

284 See Indovina, F. (2007) La metropolización del territorio: nuevas jerarquías territoriales. In: A. Font Arellano, ed. *La explosión de la ciudad : transformaciones territoriales en las regiones urbanas de la Europa Meridional*. Madrid: Ministerio de Vivienda; Boeri, S. (2005) Superluoghi, a propósito di due recenti metafore della globalizzazione, *Domus, no. 885*; and Paris, M. (2009) *Urbanistica dei Superluoghi*. Milan: Maggioli Editore.

285 Gotmann, J. and Muscara, C., eds. (1991) *La città prossima ventura.* Rome: Laterza.

286 See Rifkin, J. (2000) *The Age of Access: The New Culture of Hypercapitalism, Where All of Life is a Paid-For Experience*. New York: Tarcher/Putnam. Rifkin tried to demonstrate that the prevailing capitalist system commodifies every cultural and life experience. Rifkin claimed that in the 'age of access', mega-centres and theme destinations are the main ways to access a new commercial culture. In the U.S., large shopping malls receive more visitors than any other location, including the Grand Canyon or Disneyland. In North America, 85% of tourists say that shopping is their main activity. The world's largest shopping centre, West Edmonton in Canada is as large as 100 soccer fields and is also the most active space in cultural production. The development has been extraordinary since the first department store, Le Bon Marché in Paris, opened by Aristide Boucicaut in 1852 and what is considered the first shopping centre, the Kansas City Country Club Plaza, designed by J.C. Nichols in 1927.

287 Castells, M. and Hall, P. (1994) *Technopoles of the World: The Making of 21st Century Industrial Complexes*. London: Routledge.

288 Saxenian, A.L. (1994) *Regional Advantage: Culture and Competition in Silicon Valley and Route 128*. Cambridge, MA: Harvard University Press.

289 Hall, P. (1998) *Cities in Civilization*. London: Weidenfeld & Nicolson.

290 In 1998 Michael Porter summed up the concept of clusters in a simple definition: "Clusters are geographic concentrations of interconnected companies and institutions in a particular field." See Porter, M.E. (1998) Clusters and the New Economics of Competition*. Harvard Business Review*, Nov-Dec.

291 See Vázquez Barquero, A. (2005) *Las nuevas fuerzas del desarrollo*. Barcelona: Antoni Bosch; and Rodríguez Álvarez, A. and Esteban Galarza, M. (2009) Innovación, creatividad y territorios inteligentes. *Ciudad y territorio: Estudios territoriales*, no. 159, pp.9-29.



292 "Networks are the critical form for the flexible process of production. They include networks between large firms, between small and large firms, between small firms themselves, and within large firms that are dencentralizing their internal structure, breaking it up in quasi-independent units…" Castells, M. & Hall, P(1994) *Technopoles of the World*.

293 Hutton, T.A. (2010) *The New Economy of the Inner City: Restructuring, Regeneration and Dislocation in the Twenty-First-Century Metropolis*. Abingdon: Routledge.

294 Boyer, M.C. (1996) *CyberCities: Visual Perception in the Age of Electronic Communication*. New York: Princeton Architectural Press.

295 Gibson, W. (1984) *Neuromancer*. New York: Ace Books.

296 See Virilio P. (1994) *The Vision Machine*. Bloomington: Indiana University Press. Paul Virilio anticipated this in his book where he denounced the replacement of vision by an almost mechanic visualisation, inability to focus attention, bombardment of peripheral images, and a subsequent generalised 'topographic amnesia', the inability to locate and frame phenomena. The counterpoint to this critique is in the obvious improvements. The Shanghai Expo 2010 themed 'Better City, Better Life' demonstrated how technology would affect daily life through the evolution of the relationship between man and machine. For example, medical devices improve vital functions and in other aspects of daily life, not just in security and defence. MIT's SENSEable City Lab created the Copenhagen Wheel in 2009, a unique addition to the rear wheel of a bicycle that provides new features: it turns it into an electric bicycle and connects it to a smartphone which provides valuable data. It is estimated that what some call IoT or the Internet of Things has every day applications that are expected to generate around 600 billion euros globally in 2022.

297 See Mitchell, W.J. (1995) *City of Bits: Space, Place and the Infobahn*. Cambridge, MA: MIT Press; and Mitchell, W.J. (1999) *E-topia: "Urban Life, Jim – But Not as We Know It*. Cambridge, MA: MIT Press.

298 Mitchell (1999) *E-topia*.

299 See Horan, T.A. (2000) *Digital Places: Building Our City of Bits*. Washington, DC: Urban Land Institute. The recombinant concept anticipated by Kevin Lynch has had critical success in architecture and urban planning. See Shane, D.G. (2005) *Recombinant Urbanism: Conceptual Modeling in Architecture, Urban Design, and City Theory*. Hoboken, NJ: Wiley.

300 Graham, S. and Marvin, S. (2001) *Splintering Urbanism: Networked Infrastructures, Technological Mobilities and the Urban Condition* London: Routledge.

301 Augé, M (1995) *Non-Places: Introduction to an Anthropology of Supermodernity*. New York: Verso. However, Augé himself has admitted that his non-places are the places inhabited by contemporary urban society. That is why other authors speak about super-places.

302 Picon, A. (1998) *La ville territoire des cyborgs*. Besançon: Editions de l'Imprimeur.

303 Klingmann, A. (2007) *Brandscapes: Architecture in the Experience Economy*. Cambridge, MA: MIT Press.

304 Some authors have pointed out the difficulties and new demands of the knowledge society's ideology. Daniel Innerarity highlights how an abundance of information without critical corroboration can lead to the opposite result, misinformation and a lack of knowledge. What seems an optimistic topic has hidden risks. Innerarity proposes that knowledge, beyond being a means of understanding, is an instrument for coexistence. See Innerarity, D. (2011) *The Democracy of Knowledge*. New York: Bloomsbury.

305 See Enerlis, Ernst & Young, Ferrovial and Madrid Network (2012) *Libro blanco smart cities*. This document illustrates five fields of action, the heading of which, describes their approach; technological infrastructure, energy strategy, management and protection of resources, provision of services, and government. The company, Tecnalia raises the issue as "innovative solutions to transform the city." See Tecnalia (n.d.) *Future Cities – Smart Cities*. Derio-Bizkaia: Tecnalia.

306 Examples include the 'Green City Index' by Siemens and the Economist Intelligence Unit, 'Smart Cities ranking of European medium-sized cities' by the University of Technology Vienna, and PwC's 'Cities of Opportunity'.

307 See Batty, M. (2013) *The New Science of Cities*. Cambridge, MA: MIT Press. This is an interesting and complex book aimed at revealing the relationships and functions (networks, flows) that take place in the city to understand its complexity. Batty examines how to integrate big data and Smart Cities to make cities more resilient in the face of crises.

308 Scientific American (2014) *Designing the Urban Future: Smart Cities*. New York: Scientific American. The eight sections in the book are articulate and more ambitious than those promoted by service providers. The sections are: Cities of the Future; Drivers: Innovation and Creativity; Facing Climate Change; Efficient Buildings; Renewable Power; Easy Transport; and Urban Health.

309 Ratti, C. and Townsend, T. (2011) The Social Nexus. *Scientific American*, September. Ratti is head of MIT's SENSEable City Lab. See Morozov, E. (2014) Ciudades y ciudadanos inteligentes. *El País*, 30 August. Morozov raises some ironic questions in his article.

310 The homeostasis in social structures, i.e. their ability to remain stable, raises many questions. A collaborative governance based on the self-regulation of citizens would require not only new means of evaluation supported by ICT but also greater social empathy. Rifkin tries to distil the variables to a relationship between empathy and entropy, of collective synergy against inefficient disorder. In empathic development, the capacity for collaboration and creativity of human beings should not be exhausted. Our civilisation and environment – the Earth – are at stake. See Rifkin, J. (2010) *The Empathic Civilization: The Race to Global Consciousness in a World in Crisis.* New York: J.P. Tarcher.

311 See Florida, R. (2008) *Who's Your City?: How the Creative Economy is Making Where to Live the Most Important Decision of Your Life*. New York: Basic Books. After travelling to Bangalore, journalist Thomas Friedman wrote, 'The World is Flat', a metaphor of the 'flattening' of the world due to the effect of ICT, the diversity of places and situations is key to interpreting the most innovative environments. See Friedman, T.L. (2005) *The World is Flat: A Brief History of the Twenty-First Century*. New York: Farrar, Straus and Giroux.

312 Fundación Metrópoli has developed this concept in its projects, based on research on the components of excellence in its CITIES Project. The 'innovation ecosystems' allow the assessment of the collaborative potential among local actors to promote the knowledge economy and sustainable development. The term 'ecosystem' is not only a biological analogy, but the confidence that technological innovation should influence the governance of urban regions, activate citizen engagement and local agents in the change process and facilitate stable and collaborative institutional contexts. See Fundación Metrópoli (2010) *Fundación Metrópoli: Landscape Intelligence: Visions and Projects of the Fundación Metrópoli*. Madrid: Fundación Metrópoli. Chapter 6.2.

313 Japan International Cooperation Agency (2013) *Building a Global Model of Sustainable City Management: The Case of Yokohama*. Yokohoma: Japan International Cooperation Agency.

314 Dublin has been the fastest growing European capital in recent times, undoubtedly linked to the 7.5% average GDP growth rate of Ireland until 2008. The Urban Renewal Scheme under the 1986 Urban Renewal Act was passed in 1999, holistically integrates the city, guiding urban transformation and highlighting the need to channel benefits to local communities. One of the most successful factors for Dublin's urban management and its capacity to attract high-tech companies has been the administrative efficiency of the City Manager, who has strong powers over a 7-year period and is chosen by an independent commission. The Lord Mayors play a fundamental representative role for periods of one year and are elected by city councillors who form the government. The balance between political and professional representatives in city government has yielded good results.

315 See the Digital Hub website. Available at: www.thedigitalhub.com.

316 "Development is a do-it-yourself process […] If one wanted to define economic development in a single word, that word would be 'improvisation'. But infeasible improvisation is fruitless, so it would be more accurate to say that development is a process of continually improvising in a context that makes injecting improvisations into everyday economic life feasible. Cities in volatile trade with one another create

that context. Nothing else does, which is why backward cities need one another." Jacobs, J. (1984) *Cities and the Wealth of Nations:* New York: Random House. p.154.

317 See the Guadalajara Creative Digital City website. Available at www.ccdguadalajara.com.

318 One North is a project developed by Jurong Town Corporation (JTC), Singapore's public agency dedicated to the promotion of economic activity, in collaboration with a wide range of Singapore's public institutions. The advisory team comprises a group of ten experts, including two local representatives and senior leaders from the private sector such as Microsoft, Japanese architect Kisho Kurokawa, dean of the MIT School of Architecture and Planning, William Mitchell, Spanish urban planner Alfonso Vegara and dean of the School of Medicine of Lund University, Sweden, Per Belgrafe. See the One North website. Available at: https://www.jtc.gov.sg/industrial-land-and-space/Pages/one-north.aspx.

319 In the 2015 film 'Tomorrowland', Disney partially recreated the original idea of Epcot and the permanent component of its amusement parks. The film, partially shot in the City of Arts and Sciences in Valencia stands out for its scenery, filling its image of the city of tomorrow with amazement and wonder.

320 See the Masdar City website. Available at masdar.ae.

## 10. INTELLIGENT TERRITORIES

321 Architect and urban planners aspire to formulate problems precisely, without disregarding possible solutions. Accusations of possibilism or dogmatism are futile if it is an almost exclusive adherence to the issue.

322 Stiglitz, J.E. (2002) *Globalization and Its Discontents*. New York: W.W. Norton & Company. Stiglitz does not doubt that globalization can be positive, especially for the poorest countries. However, he raises the need to manage it differently, introducing rules and governance strategies that go beyond the simple logic of profit imposed by the market.

323 Nello, O. (2001) *Ciutat de ciutats: reflexions sobre el procés d'urbanització a Catalunya.* Barcelona: *Empúries*. Nello reflects on the urbanisation process in Catalonia, describing the limits of the endless city. This is the result of an urbanisation in which spatial specialisation and functional complexity coexist.

324 Sassen, S. (1994) *Cities in a World Economy*. Thousand Oaks, CA: Sage Publications.

325 Diverse authors such as Michael Porter, Manuel Castells, and Richard Florida have valued the 'power of place', i.e local identity, as a development factor.

326 European Commission – Directorate General for Regional Policy (2011) *Cities of Tomorrow: Challenges, Visions, Ways Forward*. Luxembourg: Publications Office of the European Union.



327 In 1996 – the year when the Internet started to become mainstream – the United States Department of Commerce coined the concept of the 'digital divide' and linked it to the inequality in access to technology

328 Sassen, S. (1994) The New Inequalities within Cities. In: *Cities in a World Economy*. Thousand Oaks, CA: Sage Publications.

329 In his research on urban inequality and poverty in Los Angeles, Mike Davis proposed a very specific view of advanced capitalism. He refers to the militarisation of social life under the argument of security and the abuse of power, which he terms the 'ecology of fear'. This is compared with Friedrich Engels' description of London in his 1845 book 'The Condition of the Working Class in England'. Los Angeles is simultaneously paradise and a postmodern dump of the American dream, where a new popular imaginary city has emerged over a devastated industrial fabric and working-class culture. See Davis, M. (1992) *City of Quartz: Excavating the Future in Los Angeles*. New York: Vintage; and Davis, M. (1999) *Ecology of Fear: Los Angeles and the Imagination of Disaster*. New York: Vintage.

330 See Sen, A. (1993) Markets and Freedoms: Achievements and Limitations of the Market Mechanism in Promoting Individual Freedoms. *Oxford Economic Papers*, vol. 45, no. 4, pp. 519-541; Sen, A. (1985) Well-Being, Agency and Freedom: The Dewey Lectures 1984. *The Journal of Philosophy*, vol. 82, no. 4, pp. 169-221; Sen, A. (1985) Justice: Means Versus Freedoms. *Philosophy & Public Affairs*, vol. 19, no. 2, pp. 111-121; Nussbaum, M.C. and Sen, A. (1993) *The Quality of Life*. Oxford: Clarendon Press; Sen, A. (1992) *Inequality Reexamined*. New York: Oxford University Press; and Sen, A. (1999) *Development as Freedom*. New York: Oxford University Press.

331 See Wilkinson, R.W. and Pickett, K. (2009) *The Spirit Level: Why More Equal Societies Almost Always Do Better*. London: Allen Lane. Some authors examine recent economic history from an inequality perspective, both in neoclassical economics (e.g. see Williamson, J.G. (2012) *El desarrollo económico mundial en perspectiva histórica: cinco siglos de revoluciones industriales, globalización y desigualdad*. Zaragoza: Prensas Universitarias de Zaragoza) and from critical perspectives that push for a change in the economic system (e.g. see Piketty, T. (2014) *Capital in the Twenty-First Century*. Cambridge, MA: Harvard University Press). Zygmut Bauman argues that it is not possible to develop contemporary society without addressing the problem of inequality. See Bauman, Z. (2011) *Collateral Damage: Social Inequalities in a Global Age*. Cambridge: Polity.

332 See Putnam, R.D. (2000) *Bowling Alone: The Collapse and Revival of American Community*. New York: Simon & Schuster; and Rifkin, J. (2010) *The Empathic Civilization: The Race to Global Consciousness in a World in Crisis*. New York: J.P. Tarcher.

333 Indovina, F. (2007) La metropolización del territorio: nuevas jerarquías territoriales. In: A. Font Arellano, ed. *La explosión de la ciudad : transformaciones territoriales en las regiones urbanas de la Europa Meridional*. Madrid: Ministerio de Vivienda.

334 Fishman, R. (1987) *Bourgeois Utopias: The Rise and Fall of Suburbia*. New York: Basic Books. Leading researchers such as Witold Rybczynski highlighted the roots of single-family housing in North American culture and the need to distinguish between suburban development projects, some of which have clear merit. See Rybczynski, W. (2007) *Last Harvest: How a Cornfield Became New Daleville: Real Estate Development in America from George Washington to the Builders of the Twenty-First Century, and Why We Live in Houses Anyway*. New York: Scribner.

335 See Barnett, J. (1995) *The Fractured Metropolis*. New York: HarperCollins.

336 Garreau, J. (1991) *Edge City: Life on the New Frontier*. New York: Doubleday.

337 Soja, E.W. (2000) *Postmetropolis: Critical Studies of Cities and Regions*. Oxford: Blackwell.

338 Ascher, F. (1995) *Métapolis ou l'avenir des villes*. Paris: Ed. Odile Jacob. There are other concepts such as exurbs, outer-cities, hypercities, and boundless cities.

339 See Indovina, F. (1990) La città diffusa. In: F. Indovina, F. Matassoni, M. Savino, M. Torres, and L. Vettoretto, eds. *La città diffusa*. Venice: Iuav-Daest; Boeri, S., Lanzani, A., Marini, E. (1993) *Il territorio che cambia, Ambienti, Paesaggi e immagini della regione milanese*. Milan: AIM, Abitare Segesta. Italian economists and sociologists have reflected on this with descriptive titles. For example, Becattini, G. (1998) *Distretti industriali e made in Italy : le basi socioculturali del nostro sviluppo economico*. Turin: Bollati Boringhieri; and Bagnasco, A. (2003) *Società fuori squadra : come cambia l'organizzazione sociale.* Bologna: Il Mulino.

340 See Koolhaas, R. (1995) Generic Cities. In: R. Koolhaas and B. Mau, eds. *S, M, L, XL, Office for Metropolitan Architecture*. Rotterdam: 010 Publishers.

341 Since the Istanbul Conference in 1996 (Habitat II), the work of UN-HABITAT has focused on two major issues, ensuring adequate shelter for all and achieving sustainable human settlements in an urbanising world. This has been achieved by improving urban services – in particular water supply and sanitation – and collaboration strategies between governments and civil society. Habitat III took place in 2016 and focused on developing the 'New Urban Agenda'.

342 In Caracas, there are hills and there are sierras. Although they are similar, hills are occupied by upscale condominiums while sierras are occupied by *ranchos*, the neighbourhoods of the poor.

343 Turner, J.C. (1972) A New View of the Housing Deficit. In: D. Lewis, ed. *The Growth of Cities*. London: Elek; and Turner, J.C. (1972) Barriers and Channels for Housing Development in Modernizing Countries. In: D. Lewis, ed. *The Growth of Cities*. London: Elek.



344 In Peru, 50% of the construction sector and 90% of transportation is informal. In Mexico City, Sao Paolo, Lima, and Caracas, between 35% and 50% of the population live in precarious conditions.

345 Lewis, O. (1966) The Culture of Poverty. *Scientific American*, vol. 215, no. 4, pp. 19-25. Although widely criticised, Oscar Lewis' concept of the culture of poverty is considered a milestone in the research on urban life in developing countries. See his earlier work, Lewis, O. (1962) *The children of Sánchez: Autobiography of a Mexican family*. New York: Random House. A recent complementary work is Hardoy, J.E. and Satterthwaite, D. (1989) *Squatter Citizen: Life in the Urban Third World*. London: Earthscan.

346 Blowers, A. (1993) *Planning for a Sustainable Environment: A Report by the Town and Country Planning Association* London: Earthscan.

347 The New York Museum of Modern Art (MoMA) held a 2014 exhibition titled 'Uneven Growth' that portrayed the vitality, diversity, and potential of numerous small urban interventions across the world. See Gadanho, P. (2014) *Uneven Growth: Tactical Urbanisms for Expanding Megacities*. New York: The Museum of Modern Art.

348 UN-Habitat (2011) *Cities and Climate Change. Global Report on Human Settlements 2011*. London: Earthscan.

349 See Gottmann, J. (1961) *Megalopolis: The Urbanized Northeastern Seaboard of the United States*. New York: Twentieth Century Fund; and Fuchs, R.J., ed. (1994) *Mega-City Growth and the Future*. Tokyo: United Nations University Press.

350 Doxiadis, C.A. (1968) *Ekistics: An Introduction to the Science of Human Settlements*. London: Hutchinson.

351 See Ross, C.L., ed. (2009) *Megaregions: Planning for Global Competitiveness*. Washington, DC: Island Press; and University of Pennsylvania School of Design (2011) *High-Speed Rail in the Northeast Megaregion: From Vision to Reality*. Philadelphia, PA: University of Pennsylvania School of Design.

352 See Vegara, A. and Ryser, J., ed. (2008) *Building the European Diagonal*. Madrid: Fundación Metrópoli.

353 See Fundación Metrópoli (2010) *Fundación Metrópoli: Landscape Intelligence: Visions and Projects of the Fundación Metrópoli*. Madrid: Fundación Metrópoli.

354 Ghent Urban Studies Team (1999) The Urban Condition: Space, Community, and Self in the Contemporary Metropolis. Rotterdam: 010 Publishers.

IMAGE CREDITS

# IMAGE CREDITS

**[U.** Up / **TL.** Top left / **TR.** Top right / **C.** Center / **D.** Down / **DL.** Down left / **DR.** Down right]

**P. 24**
U. Vitoria. Aerial Photography.
D. Vitoria: Cartography prepared by Fundación Metrópoli.

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U. Plan Cerdá 1859. Color copy of the reduced original size of 116x77 cm. Scale 1/10,000. Municipal Institute of History of Barcelona. (I.G. 10.0555 / 15.3 (1) / A-IV) Museum of History of the City of Barcelona. Room XVII (copy and lithographic stone) Library of Catalonia. Barcelona (XV-5-F / R.7444).
D. Eixample Barcelona. Photography by Agefotostock, Eduard Solé, 2004.

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U. Barcelona City Council 22@, oblique photography.
C. Barcelona 22@, aerial photography.
D. Barcelona 22@. Proposed Plan, 2007.

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Bilbao sculpture made by Fundación Metrópoli & Esther Pizarro.

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TL. Images of NUTEP Brasilia. Centre for Studies and Technologies in Public Gestao, http://nutep.adm.ufrgs.br.
TR. Plano Brasilia. Pilot Plane, 1960.
C. Aerial Photography of Esplanade dos Ministerios, Brasilia. Public Domain, via Wikimedia Commons by Mario Roberto Durán.
D. Aerial Photography of Brasilia. CC by 3.0, via Wikimedia Commons by Victoria Cámara

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U. Moscow,' Global Space Syntax. Fundación Metrópoli.
DL. Moscow. Photography by Juan Luis de las Rivas
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Bilbao's Hearts of Neighborhood Project. Fundación Metrópoli.
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U. Area view of the Kuala Lumpur Metropolitan Area
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U. Some of the new main cities in the London metropolitan region. Cartography prepared by Fundación Metrópoli.
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Photography of New York, Manhattan Skyline: CC by 3.0, via Wikimedia Commons by Lesekreis.

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The Metropolis of the Sea Project (Cartagena de Indias-Barranquilla). Fundación Metrópoli.

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U. One North Biopolis.
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Images of One North courtesy of JTC Corporation www.one-north.com.

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**P. 315**
Bilbao sculpture made by Fundación Metrópoli & Esther Pizarro.



## ALFONSO VEGARA

VEGARA is the founder and honorary president of Fundación Metrópoli, an international centre of excellence dedicated to the research, design, and innovation of cities around the world.

The focus of Vegara's work is to promote the strategic values of cities and their future opportunities in a complex and interrelated world. In 2016, he was director of the Caribbean Diamond in Colombia, which was awarded the Innovative Idea Award of 2015 by the Smart City Expo World Congress in Barcelona. His ideas and projects have been disseminated through more than 30 books and international conferences across five continents, including 'Fundación Metrópoli, Landscape Intelligence' and the recent 'Supercities, Intelligent Territories', which received the Gerd Albers Award for best book of 2016 by ISOCARP.

Vegara's projects have been awarded prizes by The United Nations, The European Union, The European Council of Spatial Planners, Architects´ Associations, Entrepreneurial Associations, national governments, and cities. Among these awards is the Rey Jaime I prize, given by the King of Spain to recognise Vegara's contribution to the fields of Urbanism and Sustainability. He´s been granted the Public Service Star Award given by the president of Singapore in 2017. He has also been awarded the prestigious European Planning Award on three occasions. He was a member of the Lee Kuan Yew World City Prize jury in four editions and is the current president of the European Regional and Urban Planning Awards jury.

He has been advisor to the Government of Singapore in One North Project, as well as to various cities around the world developing projects in Indonesia, Vietnam, Mexico, Bilbao, Buenos Aires, Kuala Lumpur, Sao Paulo, Casablanca, Moscow, Santiago de Chile, Medellin, etc. He was president of ISOCARP, the International Society of City and Regional Planners, which has members in over 70 countries. Fellow and trustee of the Eisenhower Foundation and, since 2005, has been Honorary Consul General of Singapore in Madrid.

Vegara has also been lecturing about Urbanism at School of Architecture of Madrid, University of Navarra, IE University, and CEU San Pablo University. He was also a visiting scholar at the University of Pennsylvania's School of Design and advisor at ETH Zurich Polytechnic. He has a PhD in City and Regional Planning, and degrees in Architecture, Economics, and Sociology.



## JUAN LUIS DE LAS RIVAS

DE LAS RIVAS is an architect and a full professor of Urban and Territorial Planning at University of Valladolid, where he also served as the director of the University Institute of Urban Studies and the Urban Planning Department. Nowadays he leads the professional activity of the Institute, where he directs its research group and the IUU_Lab (https://iuu.uva.es/).

De Las Rivas is an active participant at urban planning seminars and congresses and his writings have been widely published within the professional field of urbanism, such as 'El Espacio como lugar' (The Space as Place), the Spanish edition of McHarg's 'Design with Nature', the 'Atlas de Conjuntos Históricos de Castilla y León' (Atlas of Historical Centers of Castilla and Leon), 'City turns toward Nature' (in Territorio, Milano) or the scrip for the Arquia documental 'La escala humana. Pensando las ciudades con Jan Gehl' (The Human Scale. Thinking cities with Jan Gehl). His current research is focused on planning of rural regions, regarding ecology, landscape regeneration and urban design.

He is a member of Fundación Metrópoli's IAC (International Advisory Council), where he regularly collaborates on urban and territorial projects. He has directed 19 doctoral theses, and worked with a vast array of scientific committees, expert groups and associations, including a group dedicated to the assessment of Dubai's good practices for the United Nations UN-Habitat in 2010-11. His work on Territorial Guidelines for Valladoid in 2002 earned him the ECTP European Planning Award and, in 2013, he was awarded a commendation for his programme Urbanisation Actions in Castilla and Leon.

De Las Rivas was also a visiting professor at several universities such as Milan Polytechnic, University of Texas at Austin, the Iberoamerican University at Puebla, and Central University of Venezuela. He holds a PhD in Architecture from the University of Navarra.



We live in a world of cities in an increasingly urban planet. Cities are the new engines of the global economy with the potential to be the main actors leading the fight against climate change, inequality, and poverty. The past was once organised by periods of empires and nation-states, but as we now look to the future, we see a world shaped by Supercities.

Our cities, which often have limited economic resources and political power, have to address formidable challenges. Thus, we have chosen to refer to this generation of cities – the leadership, creativity, and shared vision of which can help develop initiatives and projects of significant impact – as Supercities. The Supercity has succeeded in understanding its own nature and the components of excellence needed as a basis to define its own urban profile, activate projects, and stimulate networks of cooperation.

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GALLANT VENTURE