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CITIES
CHANGE THE WORLD

LES CAHIERS N° 176
DE L'INSTITUT PARIS REGION

L'Institut Paris Region (formerly l'Institut d'aménagement et d'urbanisme de la Région Île-de-France) is Europe's largest urban planning agency and a leading regional environmental organisation.

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CITIES
CHANGE THE WORLD

LES CAHIERS N° 176
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TOWARDS A HUMAN-FRIENDLY CITY REGION

In this era of the globalised economy, the Paris Region (Île-de-France) uses its countless assets to attract investors, jobs, talents and tourists. Thanks to the ambitious policies carried out by the Regional Council and its partners over the past three years, the power of attraction of the capital region continues to grow, as shown in the latest international rankings. But international competition with other world cities must not overshadow the relationships of cooperation and interdependence that connect them to the Paris Region. We are faced with similar challenges, and we have a lot to learn from one another.

All over the world, metropolitanisation—the urban embodiment of the economic changes that have taken place over the last two decades or more, spurred by the emergence of the knowledge and information economy—is a driver of development. At the same time, our cities are in the front line as we tackle the effects not only of international migration but also of climate change and declining biodiversity. Our cities alone are able to innovate in order to find effective economic, social, scientific and industrial solutions.

To ensure the influence of the Paris Region on the world stage and to keep in step with the transitions that are taking place, our metropolitan region is carrying out a major project. This year we are celebrating the tenth anniversary of "Grand Paris", a powerful vision whose purpose is to radically transform the face of the capital region, and with it the face of France as a whole. This project, which will shape the development of our region over the coming decades, has already made some major strides forward—with the start of construction work on the Grand Paris Express transport network—and we must continue to enrich it year by year.

We must show that we are worthy of our heritage, but we also have to prove our ability to innovate and adapt to the challenges of our times. Paul Delouvrier was the father of the "*Villes Nouvelles*" in the sixties; it is now up to us to build Human Towns that will at last reconcile human beings, nature, and cities.

I propose to lay the foundations for a new kind of urbanity resting upon five pillars: urban development that preserves space and resources; the notion of proximity, helping us to build friendlier, greener cities where we have less need of cars ushering in a new village ethos; the smart city, via the reasoned integration of digital technology and innovation; solidarity between regions, thanks to a balanced form of polycentrism that will provide everyone, wherever they live, with a chance of success; and last but not least, participation and debate, which must take place before any action is taken.

The Regional Council is now firmly committed to making the Paris Region into a flagship metropolitan area that will inspire all the others: a model for an attractive, eco-friendly, inclusive city-region.

We are also curious to know what is happening elsewhere, and our action is fuelled by the best initiatives from around the world. This is what defines this issue of *Les Cahiers* published by the Institut Paris Region, which identifies and analyses what the large cities on the planet can offer in terms of transformative strategies, experiments, projects and tools. I have no doubt that this ground-breaking collection of articles, to which numerous high level experts from these cities have contributed, will be an important milestone.

Valérie PÉCRESSE
President of the Île-de-France Region
President of L'Institut Paris Region

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ILLUSTRATION: ANTOINE DORÉ

LARGE CITIES: MATRICES OF **URBAN TRANSITION**

Cities are matrices for the great transformations of the contemporary world. They are the places where economic wealth and technological innovations are created, and are the heart of financial and migratory flows. All are seeking to reinvent their development models and reduce their ecological and energy footprints, while remaining competitive and liveable. They will need to go even further in the future if they wish to survive the major transitions currently in progress.

****

Paul Lecroart, Senior Urbanist, with **Léo Fauconnet,** Political Scientist and Urbanist, and **Maximilian Gawlik,** Landscape Architect and Urbanist, L'Institut Paris Region

Stimulated by globalisation, financialisation and the rise of digital technology, over the past fifteen years or so, and especially since the 2008 financial crisis, cities have massively concentrated global financial flows. More than ever before, cities are migration hubs and melting-pots of all the world's cultures, and shape global societal values. Metropolitan regions are now part of a global interconnected urban system made up of established global cities (New York, London, Paris), of global challengers (Shanghai, Toronto, Sydney) and of emerging global cities (Shenzhen, Mumbai, São Paulo), forming a world apart that is detaching itself from national contexts. Cities increasingly resemble one another: "*the world is covered by a sole [city] that neither begins nor ends: only the name of the airport changes*[1]," says Italo Calvino's Marco Polo.

The use of cities has intensified: after a phase of deindustrialisation and decline in the late twentieth century, at the dawn of the third millennium developed cities are enjoying renewed attractiveness, especially in their central areas. They have reorganised their economies around finance, high-level services and innovation. Density in terms of jobs and inhabitants, mobility and real estate, and educational, recreational and cultural opportunities are all on the rise. Reclaimed from cars, metropolitan public spaces are being transformed into open-air lounges offering varied uses and forms of mobility, spotlighted by global urban marketing. While the hearts of cities are intensifying, urban peripheries continue to spread, fragmenting natural and rural environments and continuing the centuries-old global de-densification of metropolitan regions.

THE URBAN SPECIES

The last two decades have seen the world change faster than ever before. The planet has become hugely urbanised and anthropic: some believe that the human species is the origin of a new geological period, the Anthropocene[2], characterised by the pre-eminence of Man over the biophysical balances of the terrestrial system. The Earth now has 7.7 billion inhabitants, 4.2 billion of whom

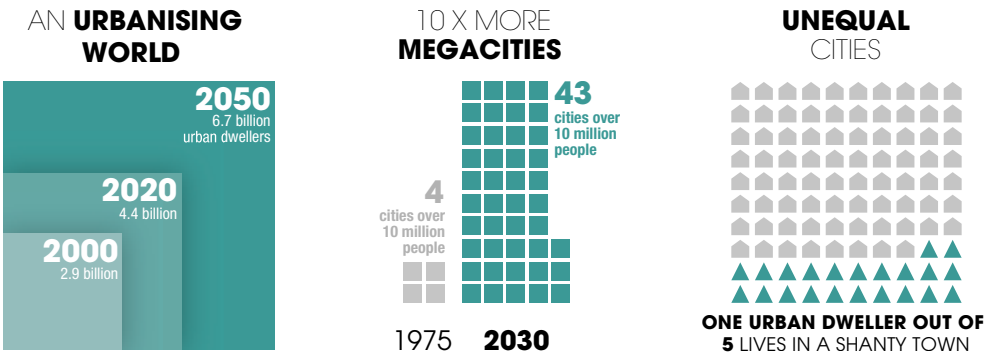
live in cities[3]: for the first time in the history of humanity, in 2007 over half of the world's population has become urban (55% today), and is thus bereft of its ancient connections with nature. There will be 5 billion urbanites in 2030 and 6.7 billion in 2050 (68%): twice the total world population in 1975...
In the 1970s, just four "megacities" had populations of over 10 million (Tokyo, New York, Osaka and Mexico City). This had risen to 33 in 2019 (including Paris), and will reach 43 by 2030[4]. The emergence of urban mega-regions, such as that of Shanghai (80 million inhabitants), the Pearl River Delta (47 million) and Jakarta (26 million), reflects the shifting of the world's centre of gravity towards Asia. By 2050, nine tenths of global urban growth will occur in Asia and Africa, giving rise to a second world of giant cities (and slums). By 2100, according to some forecasts[5], the ten largest world cities will be Lagos, Kinshasa, Dar-es-Salam, Mumbai, Delhi, Khartoum, Niamey, Dhaka, Calcutta and Kabul, each with over 50 million inhabitants (maps and data: p. 192).

SOCIAL CRISIS

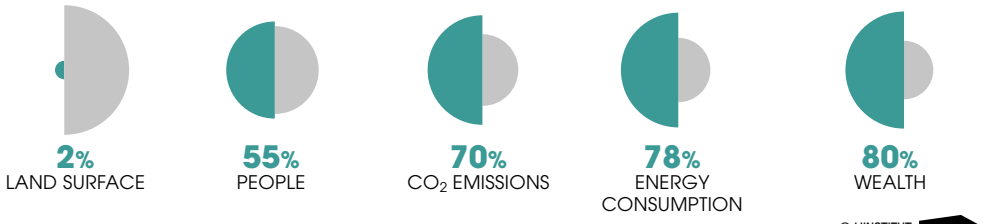
Victims of their success, cities exacerbate the contradictions of the development model put in place in the second half of the twentieth century. In 2000-2010, the spectacular rebirth of post-industrial cities in Europe and North America led some economists to be overoptimistic. In 2002, Richard Florida thought that the "creative" classes would make cities more prosperous and liveable[6]. Edward Glaeser's best seller, *Triumph of the City*[7] is subtitled: "*How Our Greatest Invention Makes Us Richer, Smarter, Greener, Healthier and Happier*"!
Fifteen years later, things had turned out very differently: *The New Urban Crisis*[8] from the same Richard Florida lamented growing social disparities and the pauperisation of the middle class in the most "successful" American cities. Among the factors that explain this are the disconnection between rising housing costs and stagnant salaries, along with the financialisation of real estate fuelled by the dizzying concentration of global wealth[9]. Since the crisis of 2008, the centres of New York, London, Singapore and Dubai, for example, have become "vertical safes" in which the liquidities of billionaires in search of safe investments can solidify; this helps to drive out the middle classes while increasing the risk of a property bubble[10]. Spatial segregation is increasing, as seen in the Paris Region[11], threatening the cohesion of metropolitan areas that had hitherto been spared, such as Munich, Copenhagen, Berlin and Oslo. With relatively high levels of poverty and unemployment and shrinking public resources, cities struggle to play their historic role of integrating migrants: the number of homeless people is rising almost everywhere.

ECOLOGICAL CRISIS

According to the Intergovernmental Panel on Climate Change (IPCC), at the current rate global warming is on track to reach at least 3°C by 2100. With 55% of the population living on 2% of the planet, cities consume three quarters of its energy and of its natural resources and emit 70% of its carbon dioxide (CO_2). These figures are growing, as the development model of cities relies 86% on fossil energy (oil, gas, coal)[12]. Taxes and public policy fail to curtail the purchase of individual houses, urban sprawl and car use, thus worsening congestion and pollution and affecting public health. Land artificialisation and the contamination of environments connected to urbanisation contribute to the global collapse of biodiversity. The global ecological footprint of cities is beyond the planet's capacities: London's footprint, for example, is equivalent to 124 times its area[13]: more than that of the United Kingdom as a whole...
Floods, heat waves, hurricanes, wildfires: faced with the realities of climate change, cities are becoming aware of how vulnerable they are. While the water supply in many cities is becoming a problem, rising sea levels threaten cities such as London, Shanghai, Lagos and Dhaka. These crises may be



CITIES: SOLUTIONS TO WORLD CHALLENGES?



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combined with other catastrophes (earthquakes, epidemics, terrorism), making resilience into an existential challenge for cities.

CAN CITIES CHANGE THE WORLD?

Faced with this situation, cities are mobilising to turn things around. Via their networks (United Cities and Local Governments, *C40, 100 Resilient Cities, Carbon Neutral Cities Alliance*), they are taking collective action against climate change, seeking a more sustainable, more equitable, and greener urban model. They played a key role in the 2015 Paris Agreement on limiting global warming to less than 2 °C by 2100. They were instrumental in the definition of the New Urban Agenda[14] of Habitat-III and the UN Sustainable Development Goals (2016), whose Eleventh Goal is "to make cities inclusive, safe, resilient and sustainable". Over 9,600 local and regional authorities in almost 60 countries have signed the Global Convention of Mayors for Climate and Energy, committing to reduce CO_2 emissions by 1.3 billion tonnes, equivalent to 276 million fewer cars.

Cities understand that reducing their global ecological footprint and their emissions by at least 80% by 2050 is a vital economic and social challenge. Although they know how tough this will be, Barcelona, Stockholm, London, Paris, Boston, Sydney, Melbourne and others aim to be carbon neutral within thirty years. For ten years, climate and energy plans and carbon strategies are developing increasingly integrated approaches: for example, going further than *PlaNYC* (2007), the *OneNewYork 2050* plan, adopted in 2014 by the city of New York, fosters systemic initiatives combining housing, social fairness, energy, resilience, climate, greening, water management, the circular economy, etc.

Long-term climate and energy strategies rely on massive public and private investment: reduction of energy consumption in buildings, the rise of renewable energy sources, the recycling of waste and materials, green infrastructures, sustainable mobility, etc. These strategies are integrated into spatial planning programmes: cities are adopting master plans for 2040 or beyond, often based on the principles of density[15], compactness and polycentrism. Some refer to the concept of the "urban *bioregion*[16], linking metropolitan and rural space within a more self-sufficient development model. Pioneers of eco-planning such as Stockholm, Malmö and Vancouver are applying the lessons learned in their eco-districts on a large scale. And now digital giants are positioning themselves on the market for major urban projects (Toronto) and urban management (China), prompting legitimate fears.

Cities are rediscovering their geography and their "nature". They are reconnecting with their rivers (New York), uncovering buried rivers (Seoul), rewilding watercourses (Munich), and revitalising suburban valleys (Milan). Thanks to intensive farming, cities are becoming islands of biodiversity providing a home for threatened wildlife. In response to the need to cool dense built-up areas, they encourage the greening of roofs, walls and terraces (Singapore), set minimum greening levels (Berlin), and develop urban forests[17] (Vancouver), wetlands (London), farming belts (Medellín) and regional urban parks (Melbourne)[18].

These projects are often citizens' initiatives: people are increasingly mobilising to invent new ecological and humanistic development models, as seen in the global "cities in transition" movement[19].

A NEW ERA?

Do these changes point to a paradigm shift? It's probably too early to tell, as the disconnect between economic growth and greenhouse gases is still in its infancy and only concerns emissions in cities in developed countries, excluding imported emissions. One thing is for sure, though: the acceleration of change (ecological, energy-related, economic, digital, democratic, etc.) that cities and humanity face is causing a great deal of uncertainty.

According to some authors, the "great transition of humanity" we have been experiencing since 1945 is comparable in significance to the Neolithic revolution and to the emergence of the first cities[20]. Others, like Michel Lussault, think that we are reaching the end of a cycle of metropolitanisation and that we need to invent more local models for the production of wealth. Still others predict that tomorrow's cities will be able to produce the energy they consume and recycle all the materials they need to operate, or even regenerate the planet's natural environment[21].

Between density and liveability, between competitiveness and social fairness, between freedom and regulation, between ecology and "business as usual", the future of cities is being prepared and debated. Each city, with its own system and its own expertise, can be an *in vivo* laboratory used to invent ways of managing the spaces where most of humanity will live. Time is the raw material for the transformation of cities and regions. The need for quick decisions and immediate action must not make us lose sight of the long-term impact of our individual and collective choices. ■

THE HITCHHIKER'S GUIDE TO A NEW GALAXY

International comparisons and exchanges between cities have been part of the Institute's DNA from the beginning*, informing and inspiring the development strategies of key players in the Paris Region. Close observation of what other cities are doing is crucial for comparison, assessing changes, providing inspiration and broadening the field of possibilities. The origin of this book is the participation of the Institute in the International Advisory Committee for the 4th Regional Plan of New York** between 2014 and 2017, alongside experts from other large cities. This book relies on exchanges with many cities and expert networks and features a large international panel of authors*** with very varied profiles, approaches and points of view: strategists, city planners, regional planners, geographers, economists, researchers, architects, landscape designers, ecologists, sociologists, and so on. The book is divided into four sections. *Megalopolis* (p.12) focuses on the challenges, trajectories and strategies of large metropolitan regions, whose economic success exposes them to major crises and uncertain futures. In parallel it deals with established global cities and emerging megalopolises, seeking to analyse their urban policies and stimulate thinking on one particular megacity, namely Paris...

Metamorphosis (p.68) tells the story of strategy-minded, agile and well organised cities and regions which, in response to a crisis, have succeeded in the space of one or two generations in reversing their trajectory. Their experience may prove very useful as cities will have to adapt to rapid transitions and to find more resilient pathways in order to cope with future crises.

Explorations (p.104) focuses on initiatives in progress. It analyses the multitude of projects and experiments taking place worldwide—including in the Paris Region—that are helping to build more liveable, more compact and greener cities that are economically attractive and socially inclusive. These explorations might serve as catalysts for change, leading to more sustainable urban models.

Prospects (p.144) aims to provide keys to understanding the metropolitan world and reflecting upon its possible futures. This chapter shows how cities are repositioning themselves in the global arena around environmental and social questions with the support of international networks. It testifies not only to the growing power of private investors and digital giants in the development of cities, but also to the strategic, tactical and creative role of ordinary citizens. It describes, via case studies, new forms of cooperation between cities, metropolitan areas, regions, and states, and mentions strategic reforms that might be necessary to respond to the new challenges faced by cities. ■

*** "Paris et huit métropoles mondiales", *Les Cahiers de l'IAURP* n°2, June 1965 or "Large-Scale Urban Development Projects in Europe", *Les Cahiers de l'Iaurif* n° 146; June 2007.**

**** International Advisory Committee for the 4th Regional Plan of New York by the Regional Plan Association (RPA).**

***** Draft articles were sent by authors between Summer 2018 and Summer 2019. Titles and sub-headings have been harmonised by L'Institut Paris Region.**

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CHANNARONG PHERNGJANDA/ALAMY STOCK VECTOR

MEGALOPOLIS

****

A global city, Paris Region belongs to the growing club of megacities, huge urban agglomerations with populations of over ten million. Very large cities and metropolitan regions are increasingly interconnected and globalised. They shape the world economy and lifestyles. They have changed dramatically over the past 20 years, attracting capital and talent, but they have to deal with a lack of affordable housing, the exodus of the middle classes, atmospheric pollution and congestion, in context of increased vulnerability (terrorism, hurricanes, floods, etc.). From New York to London, Tokyo, Beijing, Hong Kong, Mexico City and Johannesburg, strategies, plans and major projects are being developed to tackle these realities.

Buenos Aires:
***Villa 31district* seen**
from the urban highway.
PHOTO: CHRISTOPH WESEMANN

TRANSFORMING XXL CITIES: STRATEGIES AND PROJECTS

Paris, London, New York, Tokyo, Beijing, Seoul, São Paulo... very large cities lie at the heart of tensions between economic globalisation and local needs, competitive efficiency and territorial justice, growth and ecological sustainability, increased density and urban cooling, ...pay packets and the apocalypse. Often said to be ungovernable, they nevertheless develop plans and strategies on all scales, initiate large structural projects, and lead innovative pilot experiments.

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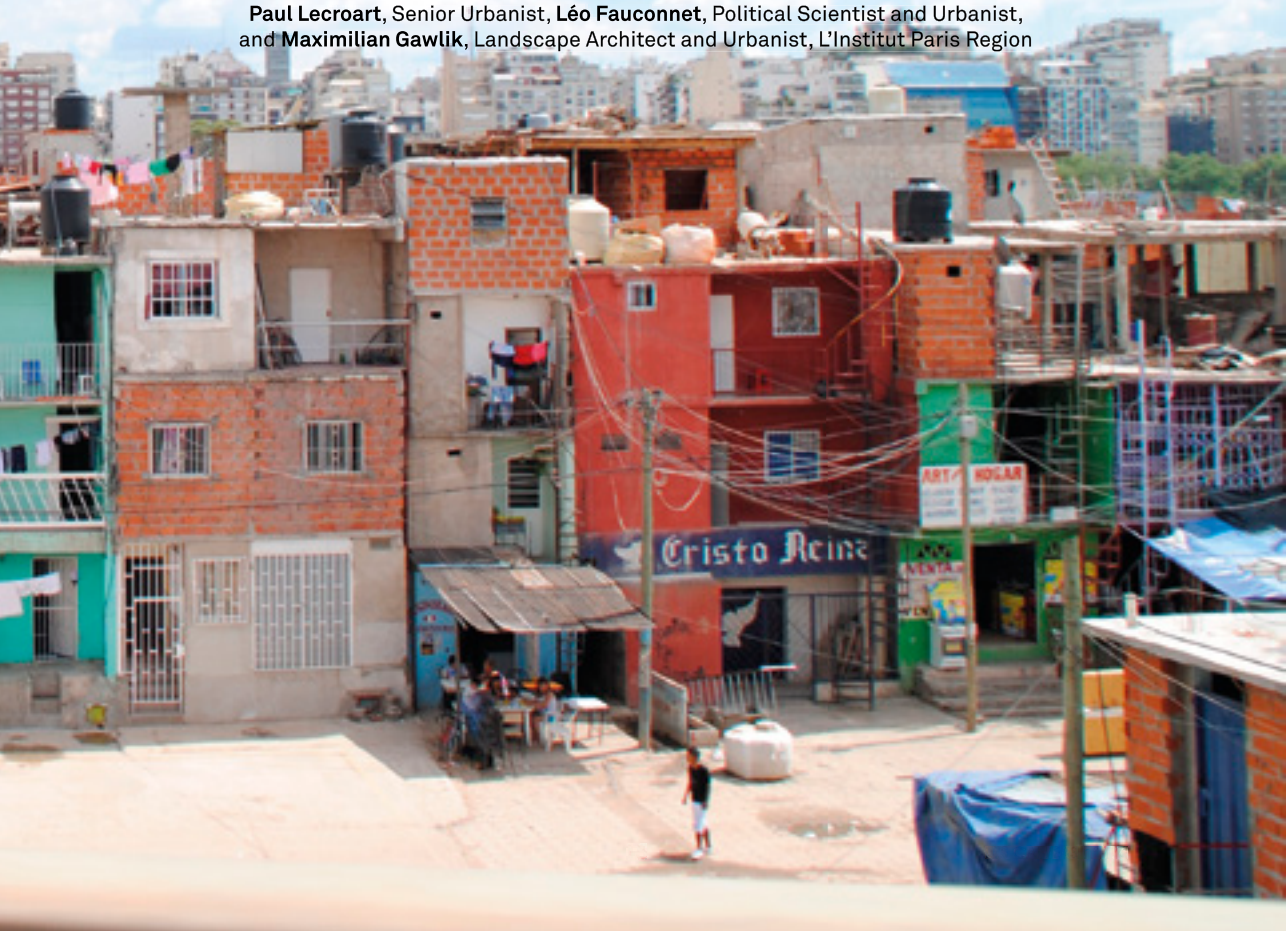
Paul Lecroart, Senior Urbanist, **Léo Fauconnet**, Political Scientist and Urbanist, and **Maximilian Gawlik**, Landscape Architect and Urbanist, L'Institut Paris Region



Established global cities (New York, Tokyo, Paris...) and giant emerging megacities[1] (Mexico City, Delhi, Shanghai...) have more in common than with their respective surroundings. The differences between northern and southern cities are becoming less clear-cut. Since the early twenty-first century, large cities in developed countries have entered an intense cycle of urban redevelopment, stimulated by international competition. Their cores are intensifying, while growth on their outskirts is generally slowing down, with some exceptions such as airport and logistics areas.

The form of large cities is increasingly being determined by the financial strategies of private investors and the scarcity of available land, which has led to a strong tendency towards densification and verticalisation, sometimes to the detriment of the landscape, quality of life, and social and territorial balance. Long-term planning still plays a part, in particular to preserve natural areas and to manage growing investment in transport (airports, high-speed trains, suburban trains, metros). However, since the crisis of 2008, long term planning has tended to give way to area-based urban planning, designed to offer investors short-term profitability. Public authorities sometimes also encourage land and property speculation: in the Middle East, Africa, China and even Europe, ghost cities and neighbourhoods are springing up, disconnected from local demand.

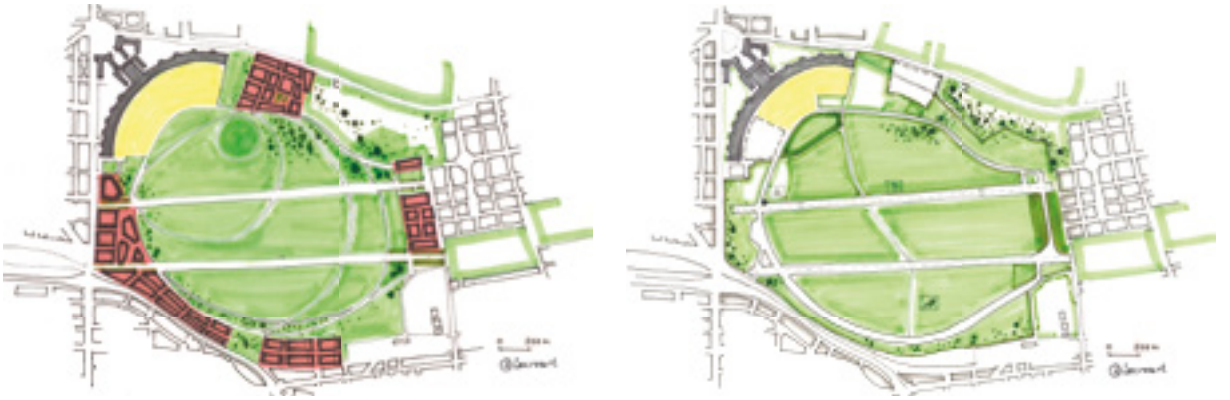
COMPETITIVENESS AND DEVELOPMENT

In a context of global competition exacerbated by economic deregulation, large cities are rivals before being allies. To counter Shanghai and Singapore, in 2011 Tokyo created a low-tax zone at its core, with less stringent planning rules, to attract Asian company headquarters and research centres. But the aging population is making the future of the world's largest megalopolis uncertain (read article by Hiroo Ichikawa, p.42).

Beijing's strategy is geopolitical: its new " Master Plan 2035" seeks to ensure its pre-eminence with respect to Shanghai and the *Greater Bay Area*[2], and to embody the vision of a powerful China. To cope with acute problems of congestion, pollution and water supply, Beijing wants to cap its population at 23 million, by forcing business and workers not connected to "capital functions" to move to new towns far away (read article by Wang Fei *et al.,* p.48 and box by Jérémie Descamps, p.50). Chinese and international experience shows that the chances of success for this type of policy are low.

CONFLICTS OF URBAN DENSIFICATION

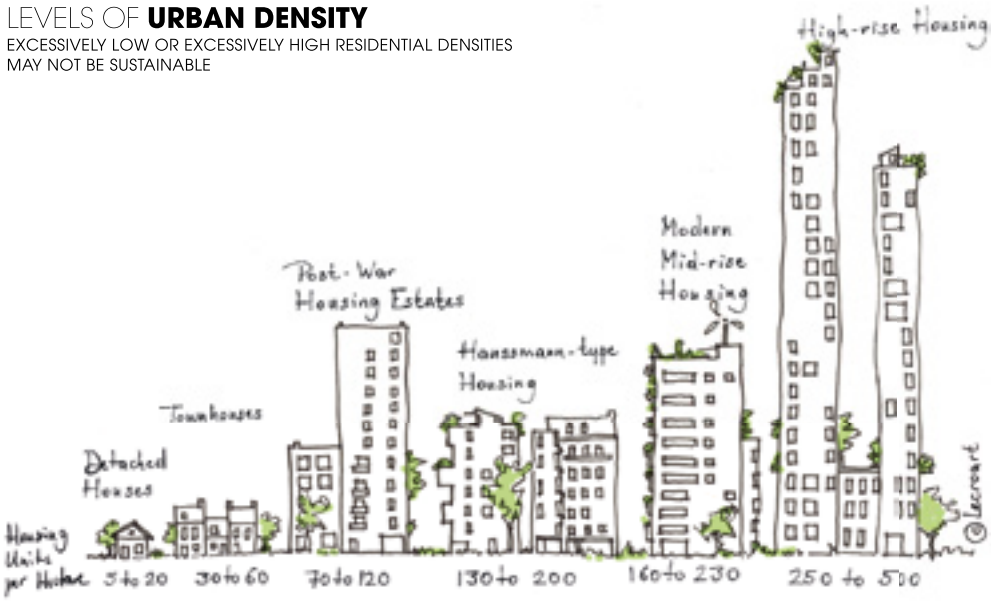
PROJECT FOR THE CONVERSION OF TEMPELHOF AIRPORT, **BEFORE AND AFTER REFERENDUM**



Sometimes densification meets with opposition, as in Berlin: after the referendum in 2012, the city had to give up its plans to urbanise the fringes of Tempelhof airport, which has since then become a large nature and leisure park.

LEVELS OF **URBAN DENSITY**

EXCESSIVELY LOW OR EXCESSIVELY HIGH RESIDENTIAL DENSITIES MAY NOT BE SUSTAINABLE



DENSITY AND VERTICALITY: "*NO LIMITS?*"

One of the challenges facing attractive cities is being able to anticipate their space requirements and orient growth where it is most meaningful in terms of transport and territorial organisation, while limiting land artificialisation and its energy and climate impacts.

The responses provided for this impossible equation vary from city to city. Hong Kong is growing according to a process of hyper-density related to a real estate value-capture system around new metro stations: though economically effective, this model is reaching its limits in terms of quality of life and housing costs (article by Alain Chiradia and Louie Sieh, p.54). Like Singapore and Copenhagen, Hong Kong wants to build on land reclaimed from the sea, at the risk of impacting marine ecosystems. The Hong Kong model has inspired Vancouver, which is proud of being one of the "world's most liveable cities", but at the expense of excluding low-income families.

In many cities such as Singapore, Moscow or Dubai, waterfronts are prime areas for vertical urban development designed to attract international investors. London is also investing in tall buildings (article by Peter Murray, p.27), but some criticise its transformation into a "Dubai-on-Thames". According to the *London Plan*, development density and scale relates to the level of public transport accessibility, with the help of instruments unheard of in the Paris Region planning system, such as the "density matrix" and the "town centres network" hierarchy. But private developers tend to negotiate higher densities, running the risk of making some on the new districts unliveable and unaffordable.

DENSIFICATION MEETS SHORT-TERM INTERESTS. WHAT ABOUT THE LONG TERM?

In New York, planning regulations are set zone by zone, and developers can negotiate density bonuses or purchase air rights from neighbouring buildings. The result is a proliferation of giant luxury towers that escape public control. Densification sometimes meets with opposition, as in Berlin: after a citizens referendum in 2012, the city had to give up on the idea of developing the fringes of Tempelhof Airport, which have since become a large nature and leisure park. The densification debate should take into account long term development, urban landscape, heritage, the social mix, and related urban amenities.

REGIONAL PLANS AND STRATEGIC PROJECTS

Not all large cities have a long-term regional or metropolitan plan. The *London Plan* extends no further than London itself, leaving the State and

the 156 councils of southeast England to manage the impacts of the capital's attractiveness (article by Duncan Bowie, p. 34). In the capital regions of Tokyo and Seoul, central states are also manning the controls.
In New York, the Regional Plan Association, a non-profit civil organisation, has taken the initiative to lay out the Fourth 2040 Regional Plan for a region split between three states, 31 counties, 782 municipalities and many failing institutions: this non-prescriptive plan draws its legitimacy from its ability to mobilise key stakeholders around shared objectives (article by Juliette Michaelson, p. 19).
Combining planning and strategic projects is crucial to determine planning orientations: the Gauteng 2030 scheme relies on key projects such as the Pretoria-Johannesburg-Ekurhuleni rail corridor to structure a fragmented African metropolis (read article by Alan Mabin and Rachid Seedat, p. 64). Latin American cities cope with scant resources by connecting affordable transport to integrated urban and social regeneration projects (article by Andrés Borthagaray and Thomas Massin, p. 60).
The (Wider) Grand Paris development relies on complex public management, a range of planning tools, and innovative projects. Key issues including: increasing the density of neighbourhoods around railway stations versus the preservation of suburban housing estates; "zero land artificialisation" policy versus continued urban sprawl; building tall buildings versus preserving heritage landscapes; urban cooling; east/west balance and the heart of the city/the outer suburbs; the future of the expressways, of suburban shopping centres, of industrial areas, etc. Underlying current debates is the definition of a sustainable development model for 2040-50 (article by Léo Fauconnet and Paul Lecroart, p. 36).

CLIMATE CHANGE AND SOCIAL INCLUSION STRATEGIES

Since 2010, the response to climatic and environmental challenges has forced its way into strategies, spearheaded by cities such as Copenhagen and Vancouver. All adopt plans for reducing CO_2 emissions by 2030, with ambitious carbon-neutrality goals to be achieved by 2040 (Stockholm) or 2050 (Berlin). Numerous pilot projects are emerging in all domains: energy conversion, eco-mobility, eco-planning, bioclimatic renovation, bio-sourced materials, water recycling, planting, "green growth", etc. Responding to the housing needs of low-income households and the middle classes is also becoming a priority.
Led by city mayors, these strategies may have limited influence when they are restricted to the municipal level, but broader, more integrated approaches are being developed (Berlin, Barcelona, Grand Paris). Nonetheless, cities have not ceased developing attractive facilities (shopping centres, private universities, opera houses, museums, arenas, luxury hotels, marinas, casinos), nor expanding their roads and airports, somewhat contradicting the energy frugality announced in the plans.
There is still a long way to go to ensure perfect consistency between planning models, socio-economic processes, and carbon-neutrality goals. Transition strategies are all the more likely to succeed when public authorities maintain tight control over the instruments of spatial transformation (planning regulations, land ownership, urban redevelopment, delivery vehicles, etc.) and major urban utilities and services that must work in synergy (energy, water, sewage, waste, networks, etc.) ■

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LARGE-SCALE DEVELOPMENT PROJECTS IN EUROPE. DRIVERS OF CHANGE IN CITY-REGIONS
Les Cahiers de l'IAU n° 146, June 2007.
CITIES IN CIVILIZATION
Hall Peter, Pantheon Books, 1998.
THE CITY THAT NEVER WAS
Marcinkoski Christopher, Princeton Architectural Press, 2015.
THE CITY IN HISTORY
Mumford Lewis, Harcourt, Brace & Co., 1961.

1. Megacities are urban agglomerations with a population of above 10 million people.
2. The Pearl River Delta is home to Hong Kong, Shenzhen, Guangzhou (Canton), Macao, and other large cities.

HIROKO MASUIKE/THE NEW YORK TIMES-REDUX-REA

Gowanus in Brooklyn.

PLANNING THE FUTURE OF **THE NEW YORK REGION**

Like many growing global megacities, the New York Tri-State Metropolitan Region is facing increasing challenges related to spatial segregation, climate change, poor infrastructure and failing institutions. Drawn up by RPA, an independent civic organization, the Fourth Regional Plan is now the road map for the region's sustainable development to 2040. How can a bottom-up plan shape a fragmented region of 23 million people?

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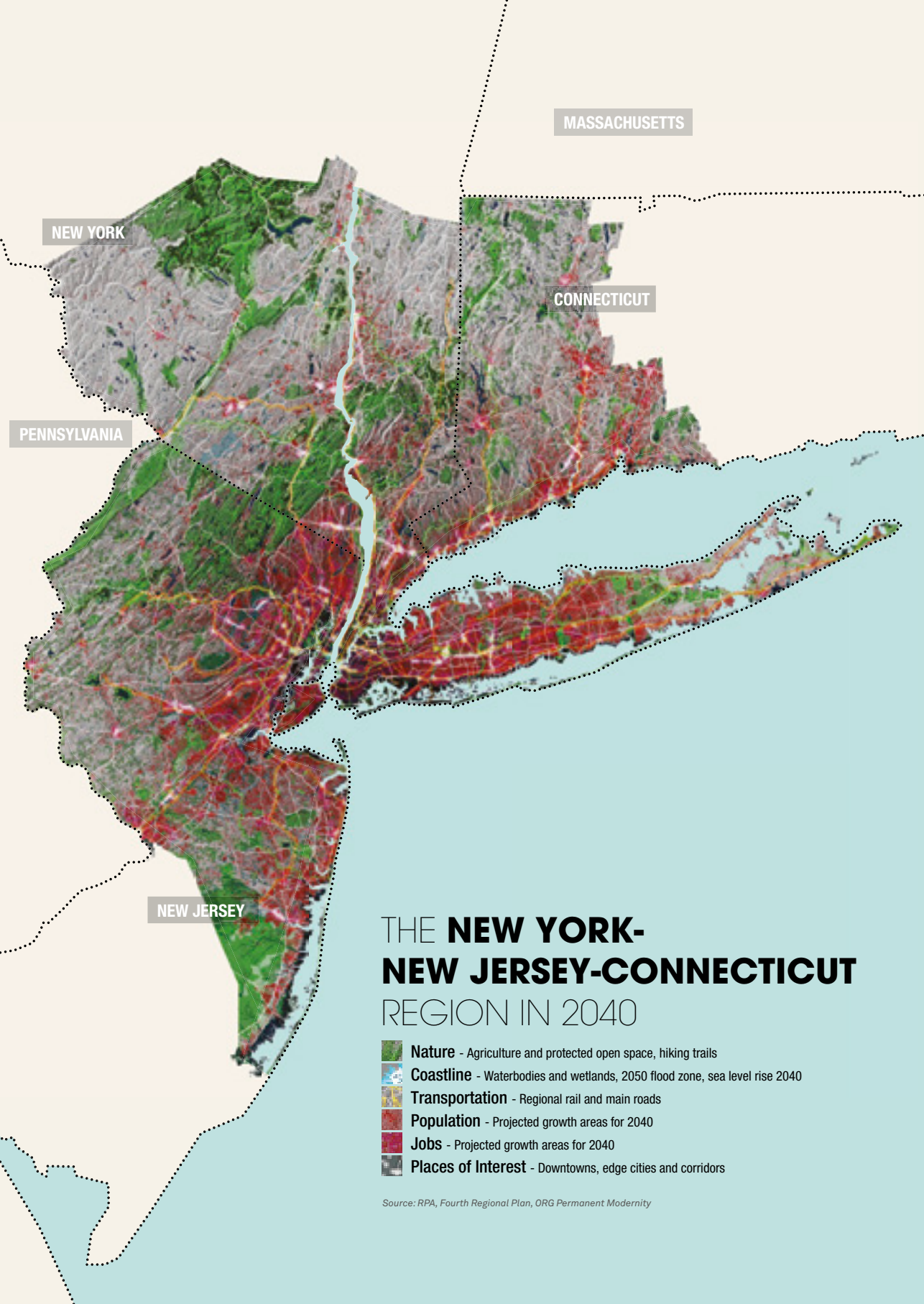
Juliette Michaelson, Executive Vice President,
Secretary to the Board of Directors, Regional Plan Association



THE **NEW YORK-NEW JERSEY-CONNECTICUT** REGION IN 2040

- **Nature** - Agriculture and protected open space, hiking trails
- **Coastline** - Waterbodies and wetlands, 2050 flood zone, sea level rise 2040
- **Transportation** - Regional rail and main roads
- **Population** - Projected growth areas for 2040
- **Jobs** - Projected growth areas for 2040
- **Places of Interest** - Downtowns, edge cities and corridors

Source: RPA, Fourth Regional Plan, ORG Permanent Modernity

Like many growing global megacities, the New York Tri-State Metropolitan Region is facing increasing challenges related to spatial segregation, climate change, poor infrastructure and failing institutions. But because there is no regional government serving Greater New York, the task of strategic planning is given to the Regional Plan Association, a civic organisation that has been writing the region's long-term plans since the 1920s. In November 2017, RPA released its Fourth Plan, a 25-year road map for the New York-New Jersey-Connecticut Metropolitan Area.

Like RPA's three previous plans released in 1929, 1968 and 1996, the Fourth Regional Plan was created to help elected officials, policymakers and advocates plan for the region's future. As a civic organization, RPA is not legally charged with writing the region's plans, and public institutions have no obligation to adopt the plans or any of their recommendations. Nevertheless, RPA's plans are influential because RPA has, over the course of decades, acquired significant political legitimacy thanks to consistent well-informed research, non-partisan policy advocacy, and a powerful board of directors.

The Fourth Regional Plan *Making the Region Work for All of Us* was the product of five years of research and public engagement, with a wide range of stakeholders participating in the planning effort—from community members and civic organizations to business groups and public officials. Ultimately, the core values that drive the plan are to achieve greater equity, shared prosperity, better health, and sustainability. It is from those values that emerged the plan's recommendations about public institutions, transportation, housing and the environment.

THE CURRENT CRISIS: ECONOMIC GROWTH, BUT AT WHAT COST?

Over the last generation, the New York metropolitan region has seen sweeping change, much of it for the better. The region's economy is thriving. After the deep recession of the late 1980s and early 1990s, and the financial crisis of 2008–2009, the tri-state area bounced back.

HOW WAS THE FOURTH REGIONAL PLAN DEVELOPED?

RPA began work on the Fourth Regional Plan by speaking with residents and experts and aggregating data. RPA's report "Fragile Success," published in 2014, assessed and documented the region's challenges: affordability, climate change, infrastructure, and governance.

Utilising detailed land-use data and intricate econometric models, RPA then documented the region's built form, quantified population and employment trends, and extrapolated future growth scenarios. RPA compared these scenarios and presented an optimal growth pattern that would achieve several benchmarks of success. This aspirational scenario guided recommendations developed for the Fourth Regional Plan.

Throughout the process, RPA staff worked with hundreds of experts in housing, transportation, land use, and environmental issues—from the region and beyond. And we received regular feedback over the years at nearly 200 meetings and forums, where we held discussions with some 4,000 people. RPA staff also engaged in deep, multi-year collaborations with community-based organizations, which represent more than 50,000 low-income residents and people of color. These partnerships helped RPA staff hear a wide range of perspectives on affordability, jobs, transportation, and environmental justice, and enabled us to stay connected at the grassroots level—no easy task in a region with 23 million residents. ■

People are choosing to live, work, and visit here. New York City is now one of the safest big cities in the nation. Public health has improved, as has quality of life.

But this recent economic success is not guaranteed, and past development trends teach us that growth alone does not always benefit everyone. For the bottom three-fifths of households, incomes have stagnated since 2000. More people live in poverty today than a generation ago. Those in the middle have fewer good job opportunities and chances to climb the economic ladder. There is greater income inequality in the region than elsewhere in the country.

While household incomes have plateaued, housing costs have risen sharply and are taking a larger share of household budgets. For many people, discretionary income cannot cover critical expenses such as health care, college, child care, and food.

These dual crises of stagnant wages and rising costs are exacerbated by a legacy of discrimination in housing, transportation, education, and other policies that limit opportunities for low-income residents and people of color. Although the tri-state region is one of the most diverse in the country, it is also one of the most segregated.

CHANGING GROWTH PATTERNS WITHIN THE REGION HAVE PUT NEW STRAINS ON CITY HOUSING MARKETS AND SUBURBAN ECONOMIES

In the second half of the 20th century, suburbs grew quickly. Cities were left behind, and struggled with growing unemployment, poverty, and crime. Over the last two decades, that trend has reversed, as people and jobs returned to New York and other well-positioned cities.

For many towns, villages, and rural communities, this reversal has resulted in fewer local jobs, an aging population, and a smaller tax base. And many older, industrial cities are still struggling to grow their economies.

But for New York and other growing cities, the return of jobs and people has presented new challenges: rising real estate prices and rents, families displaced by unaffordable housing, and neighborhoods that longtime residents no longer recognize as their own. This growth has also put additional pressure on the region's aging infrastructure, including subways and roads.

THE WAY FORWARD

It doesn't have to be this way of course. Metropolitan regions around the world are taking on these problems by investing in neighborhoods and business districts; building modern infrastructure that increases capacity, improves resilience, and boosts economic competitiveness; and adopting innovative solutions to protect coastal areas.

In envisioning what this future should look like, RPA and our partners in the creation of the Fourth Regional Plan came to identify four core values that should serve as a foundation for the region, and should guide the development of the plan's recommendations. The four values are:

- Equity: Individuals of all races, incomes, ages, genders, and other social identities have equal opportunities to live full, healthy, and productive lives.
- Health: Everyone deserves the opportunity to live the healthiest life possible, regardless of who they are or where they live.
- Prosperity: The standard of living should rise for everyone.
- Sustainability: The region's health and prosperity depend on a life-sustaining natural environment that will nurture both current and future generations.

THE PLAN'S RECOMMENDATIONS

The Fourth Regional Plan details 61 recommendations to make our region more equitable, healthy, sustainable, and prosperous. They are organized into four broad "actions":

First, institutional reform. Solving the region's existential challenges will require public officials and citizens to reassess fundamental assumptions about public institutions. It takes too long and costs too much to fix our region's deteriorating infrastructure. Housing policies, local land-use practices, and tax structures are inefficient and reinforce inequality and segregation. And truly addressing the growing threat of climate change requires investments far more ambitious and strategic than we have made so far. Recommendations include, for instance, the establishing of a Three-State Regional Coastal Commission to manage and fund coastal resilience projects and reforming the regional transportation authorities.

Second, maintenance and new construction of transportation infrastructure. Some improvements are relatively quick and inexpensive, but new large-scale projects are also necessary. These investments will have far-reaching and positive effects on land use, settlement

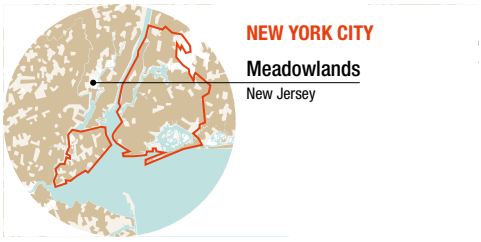
RPA, FOURTH REGIONAL PLAN, ORG PERMANENT MODERNITY

A NATIONAL PARK IN THE NEW JERSEY MEADOWLANDS

One of the more ambitious and out-of-the-box recommendations from the Fourth Regional Plan is to designate a new national park in the New Jersey Meadowlands, right outside New York City.

The New Jersey Meadowlands is both the largest wetland in the region and an overdeveloped industrial center. It is the site of critical rail lines, a regional airport, fossil-fuel storage facilities, highways, freight facilities, and thousands of workers and residents. It will also be one of the first places to be permanently inundated by sea-level rise.

National parks are a uniquely American idea to preserve and highlight our most treasured natural assets. Creating a national park at the Meadowlands would send a strong signal about the importance of climate change, and demonstrate how properly managed natural landscapes can mitigate its impacts. A national park designation would also help preserve and restore the Meadowlands' natural habitats, protect local communities, and provide a new recreational resource for the entire region. ■



patterns, public health, goods movement, the economy, and the environment. Some of the plan's transportation recommendations include:

- Levy charges and tolls to manage traffic, including congestion charge in Manhattan and on highways throughout the region, to reduce congestion, free up road space for goods delivery and other uses, and generate revenue for roads and transit.
- Modernize New York City subways, with a modern signaling system as a top priority, and expand network into dense neighborhoods, particularly low-income areas.
- Create a unified, integrated regional rail system and expand regional rail, into a seamless regional transit system, including the T-REX proposal.
- Design streets for people and create more public space to prioritize walking, biking, transit, and goods deliveries over private cars.

Third, climate change is already transforming the region, and we need to accelerate efforts to adapt. Today, more than a million people and 650,000 jobs are at risk from flooding, along with critical infrastructure such as power plants, rail yards, and water-treatment facilities. By 2050, nearly two million people and one million jobs would be threatened. We must adapt our coastal communities and, in some cases, transition away from the most endangered areas. We will also need to invest in green infrastructure in our cities to mitigate the urban heat-island effect, reduce stormwater runoff and sewer overflows, and improve the health and well-being of residents. And finally, affordability. The region needs quality housing for all income levels in places that have good transit service. It must also invest in smaller cities and downtowns to boost economic opportunities throughout the region. Housing costs must come down with additional housing construction in mixed-use mixed-income communities, and more strategic use of subsidy programs. Efforts to curb displacement and homelessness must be more effective.

LESS THAN TWO YEARS AFTER THE FOURTH PLAN WAS ADOPTED, THE NEW YORK STATE GOVERNMENT TOOK THE HISTORIC DECISION TO APPROVE A CONGESTION PRICING CHARGE IN NEW YORK FROM 2021

FROM PLAN TO IMPLEMENTATION

The Fourth Regional Plan looks ahead to the next generation, allowing us to set our sights high and not be constrained by current political dynamics. But we know a generation is too long to wait for many of the region's most pressing challenges, and so the Plan is also a document to inform short-term advocacy efforts.

If we succeed in implementing the vision and recommendations outlined in the Plan, the region will be more equitable, healthy, sustainable, and prosperous. The plan provides a model for growth that creates a larger tax base to finance new infrastructure, an expanded transit network, more green infrastructure to protect us from the impacts of climate change, as well as sufficient affordable housing and other necessities that together create a virtuous cycle.

RPA will build on the partnerships it has created through the development process for this plan to ensure its recommendations are debated, refined, and ultimately implemented. The continued success of the region and all of its residents depends on it. ■

FURTHER READING

THE FOURTH REGIONAL PLAN: MAKING THE REGION WORK FOR ALL OF US
Regional Plan Association (RPA), November 2017.
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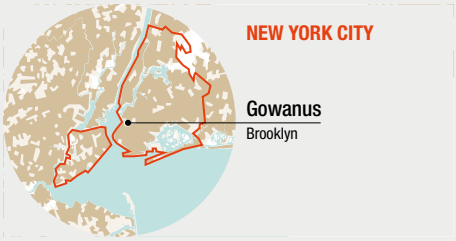
RPA, A Report of The Fourth Regional Plan, April 2018.

Rezoning New York City: claiming value for public benefit in Gowanus, Brooklyn

In May 2014, Mayor Bill de Blasio released *Housing New York,* a *Five-Borough-Ten-Year-Plan,* setting an ambitious goal of creating or preserving 200,000 units of affordable housing within ten years. (the goal was increased in 2017 to a total of 300,000 units.)
New York's Zoning Resolution regulates the city's land use and density, and changes in zoning are the city's principal instrument for catalyzing urban change. Under the Bloomberg administration (2002-2013), 40% of the city's land area was rezoned; much of it from low-density industrial to high density residential uses, accelerating development while deepening the housing affordability crisis. Mandatory Inclusionary Housing (MIH), a cornerstone of de Blasio's housing plan, grants developers increased density and requires them to build affordable housing.



Low-income communities targeted for rezoning have protested that the resulting new units are still too expensive for current residents, while landowners benefit from a windfall of increased land value. Non-profit organizations have enabled those communities to claim a role in the rezoning process, negotiating changes that create benefits and mitigate harms to local residents and businesses. •••

PAUL LECROART/L'INSTITUT PARIS REGION

Visiting Gowanus with members of the Fifth Avenue Committee. Local communities are highly involved in the rezoning of New York's former industrial neighbourhoods.

●●● Gowanus, in Brooklyn, now being studied for rezoning, presents a different prospect. The neighborhood is historically a heavy manufacturing area surrounding a polluted canal (now being cleaned up under the federal Superfund program.) Commercial and residential gentrification has been underway since the 1990s, but many small industrial businesses remain. And Gowanus is also home to three public housing developments comprising nearly 2,000 units, in which 30% of households live below the federal poverty level of $23,550 per year.

System-wide, New York's 179,000 public housing units face an unmet capital need of over $31 billion, and conditions in many projects jeopardize residents' lives and health. Yet the imperative of preserving this irreplaceable public asset is universally recognized, and is all the more urgent in locations like Gowanus that offer access to transit, jobs, and opportunity.

Fifth Avenue Committee, a local organization whose mission encompasses both community development and organizing, recognizes the opportunity that a rezoning of Gowanus could present. Planners and political leaders in all US municipalities use zoning as a tool to create wealth, in the form of increased property value. A fraction of that wealth is typically claimed for public purposes through local property taxes; MIH dedicates an additional increment to the creation of affordable housing. Yet the greatest share of that value –created by public action– accrues to whoever owns the rezoned land. In New York and most other US cities, that value is never disclosed, or even fully quantified. Gowanus landowners will also benefit from environmental remediation and mitigation work, much of which is funded directly or indirectly by the public.

The planning framework document released by the Department of City Planning of New York suggests that many sites now occupied by one- and two-story industrial buildings will be rezoned to allow residential development of 12 stories or more.

Fifth Avenue Committee is working with a team –Pratt Center for Community Development, the Lincoln Institute of Land Policy, David Rosen Associates, and Earth Economics– to calculate the increase in land value that would be created by that rezoning and by the environmental work, and identify mechanisms for claiming a portion of it. With input from public housing and neighborhood residents, the team will also draft a set of principles for the reinvestment of that value – with the preservation of public housing clearly a high priority.

Even revealing the land value created by a rezoning would represent a big departure from the review process that now precedes a zoning change in New York. Any proposal to claim a share of that value for a public purpose will be resisted by developers who benefit from the "black box" status quo.

Yet the political moment, in New York and perhaps beyond, may allow for a re-calibration of what is possible. ■

Joan Byron
Program Director, Neighborhoods First Fund

FURTHER READING

ONENYC 2050. BUILDING A STRONG AND FAIR CITY
City of New York, April 2019.

PUBLIC ACTION, PUBLIC VALUE: INVESTING IN A JUST AND EQUITABLE GOWANUS NEIGHBORHOOD REZONING
Pratt Center for Community Development, Report December 10, 2019.

www.neighborhoodsfirstfund.nyc

PAUL LECROART/L'INSTITUT PARIS REGION

Migrants passing by a luxury high-rise building site in East London.

LONDON – PLANNING A WORLD CITY

As a leading global city, London's has experienced strong economic and population growth in the last 20 years under three mayors, with what some see as a Dubai-like investor-oriented, high-density, development model. This success has led to a city-wide housing affordability and availability crisis. London is anticipated to grow from 8.9 million people today to 11 million by 2041, but will the British capital be able to provide space, infrastructure and resources to sustain such long-term growth?

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Peter Murray, Curator-in-Chief New London Architecture (NLA)
London's Centre for the Built Environment

Following the publication of the Greater London Plan 1944 prepared by Sir Patrick Abercrombie, it became Government policy to reduce the density of the UK capital and move people out of London to new towns constructed outside of a "Green Belt" that encircled the capital and where no new development could take place.

As a result of this exodus the population of the city dropped from 8.6 million in 1939 to 6.7 million in 1988 - London suffered 40 years of economic decline and low investment. Things began to change with the deregulation of financial services by the Thatcher Government in 1986 - the so-called Big Bang - which led to overseas banks migrating to London, an end to the decline in population, and a boom in construction.

At that time there was no strategic, unitary authority for London - the Greater London Council having been closed down in 1986 after its left wing leadership clashed with Prime Minister Thatcher. But as the capital grew there was increasing pressure from business and local authorities for London to be governed in a way that reflected its growing world city status. Their prayers were answered by the Blair Government which created the post of elected Mayor of London. The first incumbent, Ken Livingstone, took his post in 2000 and drew up the first London Plan.

However, Prime Minister Blair had been careful to restrict the Mayor's powers by limiting his ability to raise money - for most funding the Mayor had to go cap-in-hand to Government.

PLANNING LONDON UNDER THREE MAYORSHIPS

Livingstone therefore realised he had to find novel ways of paying for growth. The Congestion Charge, where vehicles were taxed to enter the central area, was as much about raising money as it was about reducing traffic. To build the homes he needed meant Livingstone had to engage with private developers who helped to

ANJA/GETTY IMAGES

London's verticalisation occurs in central areas and those that are well connected by public transportation (photo: Poplar Docks and Canary Wharf).

fund housing and social improvements through 'Section 106' - named after the number of the clause in the legislation. Section 106 is in effect a tax on development which can be used to pay for new infrastructure and affordable housing (the public sector having all but given up building housing in the Thatcher era). It therefore acts as an incentive for development. Livingstone was accused by his enemies as having a 'love affair' with developers and he actively promoted tall buildings. He supported The Shard, the tallest building in the capital, which delivered some £37 million in Section 106 income to regenerate the surrounding area.

INTENSIFICATION IS VIEWED BY LONDON MAYORS AS A WAY OF PAYING FOR NEW INFRASTRUCTURE

Livingstone's London Plan was based on theories originally promoted by his architectural advisor Lord Richard Rogers in his book *Cities for a Small Planet* which proposed a more sustainable city with dense urban areas constructed around centres with good public transport, reducing dependency on the motor car. The plan suggested that all development for London was to be concentrated within the boundaries of the Greater London Authority, in stark contrast to the post-war policies of dispersal to new towns across the south-east region.

The geographic restraint thus imposed has required new developments to be more dense - if London cannot build out, then it has to build up. As an open trading city, London has exhibited little suspicion of foreign investment in developments. Both Livingstone and Johnson recognised the economic benefits of overseas investors. Johnson made successful and well-publicized trips to the near and far east to court major developers. As a result of his policies large parts of London are now being developed with money from mainland China, Hong Kong, Malaysia and Singapore as well as Canada and the USA. This is significant because domestic developers do not have the appropriate financial models for the large-scale projects the Mayors need to deliver the number of homes that are required. London's willingness to absorb international investment was described as 'Wimbledonisation': London provides a level playing field for foreign players, it is stable and resilient, it has tradition but it is open to innovation.

Sadiq Khan has been more circumspect regarding overseas investment than his predecessors because of public reaction against the number of new homes that have been sold to overseas buyers - in spite of the fact that this form of individual investment is very different to the corporate investment in development projects. Far Eastern buyers are attracted to London homes as a stable investment and a safe-haven for their money, and have been wrongly blamed in the press for the high price of homes. This has focused public attention on the use of new developments in the London as "bank boxes in the sky." As a result Khan commissioned a report from the London School of Economics which found that the impact of foreign buyers was far less than had been imagined, mainly because new build is such a small proportion of overall transactions and that less than one per cent of new homes purchased from overseas are left entirely empty.

Khan's response to the LSE report was that "international investment plays a vital role in providing developers with the certainty and finance they need to increase the supply of homes and infrastructure for Londoners".

The Mayor needs all the help he can get if he is to deliver the 66,000 homes year to cater for the growth in population which is expected to rise to around 11 million by 2041, if he is to fill the backlog caused by underinvestment and slow delivery in the past and reduce the high cost of housing.

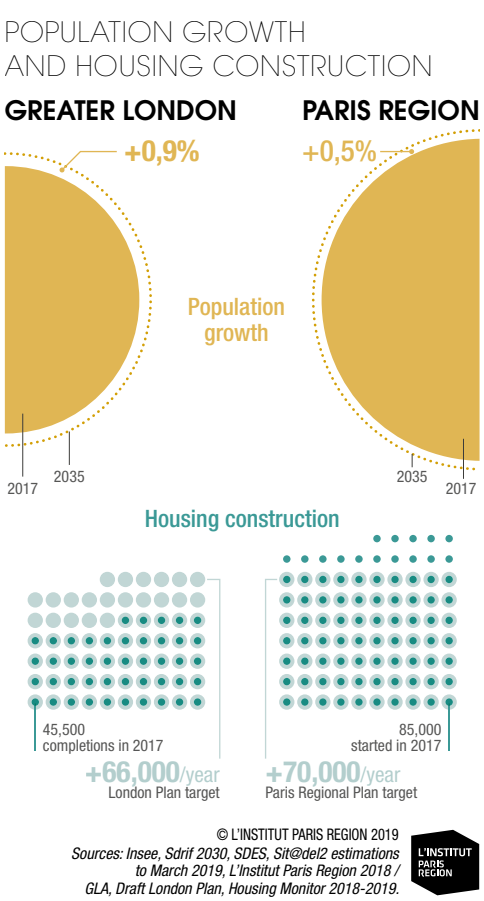
DELIVERING MORE HOMES. HOW?

His first problem has been finding enough land within the constraints of the Green Belt. Available sites have been identified in '*Opportunity Areas*' which are mainly 'brownfield sites', previously used for industry; Transport for London,

which is controlled by the Mayor, has available land around many of its stations and will bring forward sites for 3000 homes this year; Sadiq Khan is also promoting the idea of infill development of smaller sites - these are planned to provide a quarter of a million homes in the next decade. The regeneration or intensification of post-war public housing estates is another source of land but has become an area of some contention. Often delivered in partnership with a private developer the regeneration of the estates is seen by the left as gentrification, where existing communities are unable to return to their neighbourhood; those who have purchased their homes under the Government's 'right to buy' programme are angry that their investment did not pay off. The Mayor has proposed that before such projects are implemented a referendum is held and the views of the local community are ascertained.

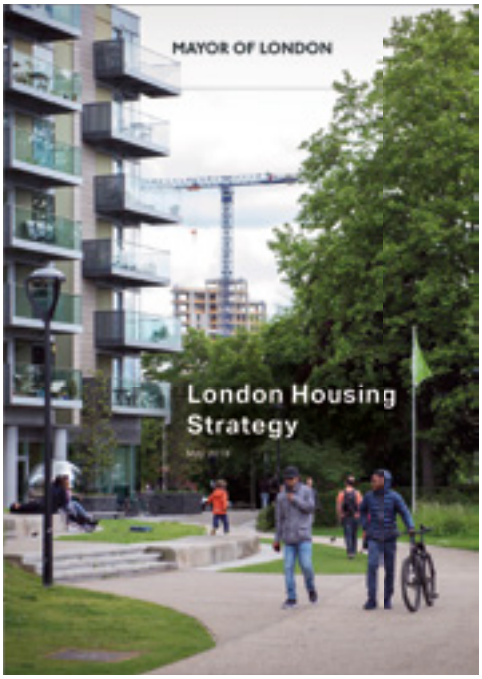
The second problem is who delivers the housing? Previous Mayor's have focused on large-scale private housebuilders. However they are seen as unreliable partners in delivering at the speed required because of the 'absorption rate' of new homes - if the market slows down, so do the house builders. Private house builders are also under pressure from the Mayor to increase the percentage of 'affordable' homes they deliver in conjunction with the state-supported Housing Associations. The Mayor is currently demanding 35 per cent of homes should be affordable with a longer-term target of 50 per cent - a policy that has been criticised by house builders on the grounds of its impact on their profitability. The inability of the private sector to deliver 'social housing' for those in most need has prompted the public sector to get back to delivering housing - something it hasn't done since the 1980s.

The third problem is building them. The construction industry workforce is waning, young people are unwilling to take on messy careers on building sites and post-Brexit, the EU workers who are the backbone of London's construction teams will be a more difficult source. The Mayor is therefore promoting greater prefabrication in building in order to reduce costs, speed up the process and improve the quality of the end product.



STRATEGIES AND POWERS

Central to the delivery of more homes is the infrastructure that serves them. Crossrail 1, which goes across London east to west is due for completion at the end of 2018-2019. Crossrail 2 which runs diagonally from the south-west to the northeast is awaiting funding approval from the Government. The Mayor was challenged by the Chief Secretary to the Treasury "*to determine how at least half of the cost of the scheme can be met through private sources*". These private



The strategy of Greater London is based on the London Plan and several thematic "strategies" such as the Housing Strategy.

sources will include a range of taxes through the Community Infrastructure Levy (CIL), charged per square metre on all new development, and other mechanisms for capturing the uplift in land values as a result of the new line.

Khan's plans for a greener London are to be welcomed, but he has been criticised for the slowness of delivery. His aim is to have the best air quality of any major world city by 2050; to make London the world's first National Park City where more than half of its area is green; for London to be a zero carbon and zero waste city, for London to transition to a low carbon circular economy and to improve London's appalling pollution record. He is imposing emissions controls and is planning to increase the percentage of people using active travel - walking, cycling and public transport - from 40 per cent to 80 per cent by 2041. However his plans to pedestrianise polluted Oxford Street, London's most important shopping street, were recently thwarted by local politicians nervous of the impact the banning of buses and taxis would have on surrounding residential neighbourhoods. Plans for Cycle Super Highways across London have been delivered at snail's pace because of 'bikelash' from motorists, in spite of many being 'spade-ready' at the end of the Johnson administration.

The Mayor's powers are limited. He has to deal with 33 local authorities of a variety of political persuasions and an antagonistic Government who are his paymasters. He commands a city where a majority of land is in private ownership and where planning system is pragmatic and subject to negotiation. It has long been thus: the famous London squares were built by private developers, not a Napoleonic decree while the city's architecture is variegated, reflecting ownership patterns. He also commands a city which is historically resilient, global in its attitudes, energetic, creative, diverse and adaptable, and that provides great hope for the future. ■

London's tall buildings issue

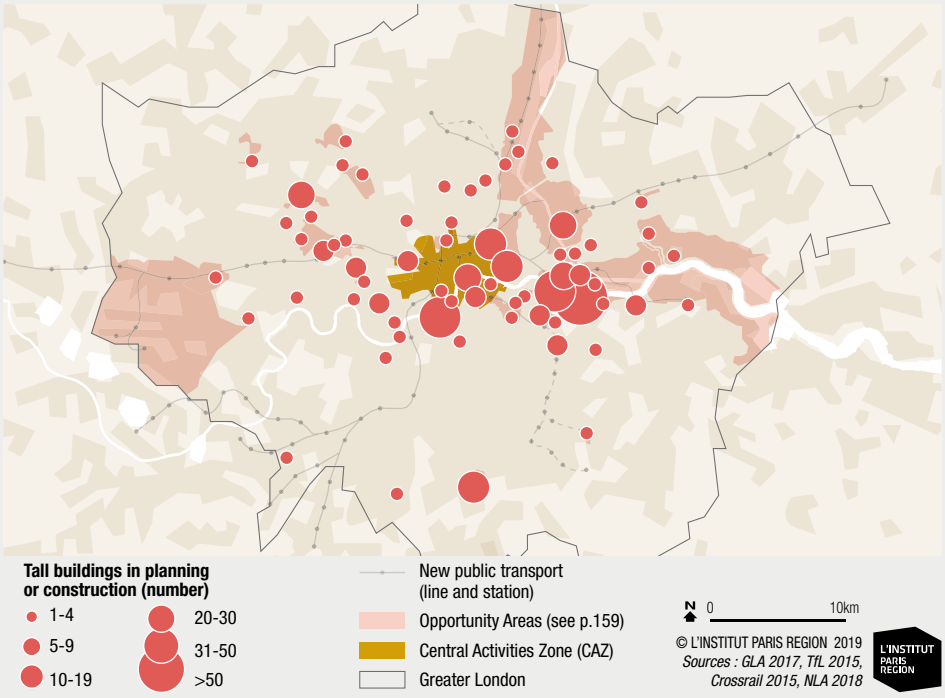
In November 2013 I attended a press conference given by the then Mayor of London Boris Johnson. He was discussing how many thousands of homes he needed to deliver to solve the capital's housing crisis. "But it doesn't mean there are going to be tall buildings popping up all over the place!" he said. I was unsure of his claim as I was aware of quite a large number of towers already 'popping up' so the NLA commissioned some research: checking through the different local boroughs who give planning permission for new buildings and speaking to housing developers to find out what projects were in the pipeline. We found there were some 236 towers either under construction or proposed over 20 storeys in height, with a small number over 60 storeys. This number of met by astonishment locally and internationally. "But London is a low city," people said. Not anymore. The total even surprised the Mayor. Since then there has been greater acceptance of tall buildings. When we carried out the same research in 2018 the total number of tall buildings in the pipeline was 510. Hardly anyone commented.

How has this dramatic change come about? There were a few tall buildings commissioned in the 1960s but their popularity waned and no new ones were constructed until 1987 when the Canadian/US developer Olympia and York began building the Canary Wharf development in the docklands area of east London in order to provide office space for the American banks flocking to London. To encourage developers to regenerate the docks the government had relaxed the planning regulations and constraints on the height of buildings. Thus, it was natural for a North American developer to want to build skyscrapers. At 50 floors, One Canada Square, the centrepiece of Canary Wharf, was then the tallest building in the UK. A decade later the City of London – the traditional business and financial centre – was nervous that Canary Wharf was attracting too many of the financial institutions and reversed its planning policies of restricting the height of buildings to permit 30 St Mary Axe ('The Gherkin') designed by Foster and Partners. The City was also conscious that Frankfurt was competing for the title of financial capital of Europe and had recently published a masterplan showing a spate of new towers. Following the success of the Gherkin - other towers followed, including The Shard designed by Renzo Piano.

Until 2005 most towers had been for commercial use, but when permission was given for the 52 storey St George's Tower in Vauxhall on a .25ha site it set a trend which developers have emulated ever since to maximise the value of their land.

Tall buildings in construction at Nine Elms.

HIGH-RISE CONSTRUCTION IN LONDON



Following the 2008 financial crisis, there was less demand for commercial buildings but there was considerable demand interest among purchasers in Hong Kong and Singapore for residential investments. Since the local market was dead, this was a lifesaver for the struggling development sector. The fact that far eastern buyers are used to living in tall buildings was an added incentive to go higher. London's planning policies control the location of tall buildings and suggest they are built in clusters, rather than as individual landmarks. Also, they must not obscure a number of important views of historic monuments such as the dome of St Paul's Cathedral and the Houses of Parliament.

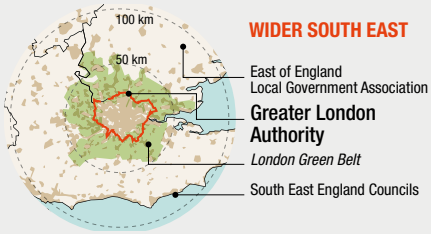
Restrictions on height relate to impact on views and on the take-off and landing patterns of aeroplanes using Heathrow or City airports.

There is a growing understanding that tall buildings are not the only way to deliver higher density living. Blocks of apartments 8-10 storeys high can do that too but generally require larger sites. However, the pressure on the Mayor to deliver 66,000 homes per year and plans by Transport for London to develop around stations in urban centres, often with smaller sites, we are likely to see a continuing rise in the total number of tall buildings in London in the next decade. ■

Peter Murray
Curator-in-Chief New London Architecture (NLA)- London's Centre for the Built Environment

Beyond the compact city: London metro region

Successive London Plans from Mayor Livingstone's 2004 Plan to Mayor Khan's proposals for the 2019 Plan, have all been predicated on the concept of the compact city. Mayors have all held to the notion that London's population growth can be contained within the existing administrative boundary of London, without any requirement for the need to export either residential or employment related growth into the city – region travel to work area beyond the existing boundary – into the outer metropolitan area within the Wider South East.



The London Plan 2014

The proposed new version of the London Plan, based on a new Strategic Housing Market assessment and a new Strategic Housing Land Availability Assessment asserts that while housing needs are 66,000 homes a year for the next 10 years, development capacity can provide 65,000 homes a year. Even this (theoretical) minimal deficit of 1,000 homes a year has generated a lively debate at political level in the Wider South East as to how this gap is to be met.

There is likely to be a repeat at the forthcoming London Plan Examination in Public commencing in January 2019 of the debate about the London housing deficit that occurred at the Examination in Public of Mayor Johnson's London Plan in 2014. Back then, the planning inspector did question whether the London housing target was deliverable; whether the compact city approach remained appropriate and recommended that the Mayor develops a more collaborative strategic planning approach with the planning authorities in the wider city region.

Mind the Gap!

Although the densification approach may have increased the number of housing units given planning consent, net completions within the London boundary since the original London Plan adoption in 2004 have averaged 27,750 a year. This means that the delivery gap is much greater than the Mayor's latest assumptions imply. The undersupply within the London boundary forces households to move further away from their jobs which increases commuting, with significant environmental and social costs.

The undersupply is also increasingly becoming a problem for London's businesses and therefore for the long-term viability of the London economy.

Moreover, the majority of planning consents have related to small flats at relatively high market prices, with very few family-sized rented homes, and very few new local authority or housing association homes at lower rents. The development has been largely driven by the needs of investors, including international investors, rather than by the housing requirements of London's existing and projected population.

The Mayor is now proposing to delete the London Plan matrix which sets out appropriate density ranges for new developments in different types of location and replace it by a scheme by scheme design led assessment, which will enable much higher density development, including further high rise and hyper-density projects following the pattern of Hong Kong and Shanghai.

The debate over London's development has been further complicated by uncertainties,

FLYBY PHOTOGRAPHY- www.flybyphotography.co.uk/ALAMY STOCK PHOTO

View of London's metropolitan fringes in Dartford. Is the Wider South East ready for development?

such as the impact of the Brexit on London's population and workforce. We are only now getting some idea as to the likely changes to the UK's immigration policy, while uncertainties remain as to the potential impact on inward investment. The Prime Minister has recently announced increased taxation of international property investment in the UK without identifying alternative forms of public and private domestic investment. A fall-off in London's development output may be on the horizon. Brexit may also lead to a reduction in house prices, which may be of use to marginal first time buyers, but this will hardly stimulate investment in new building.

The need for a wider approach

The focus on the compact city approach and an absolute protection of the extensive Green Belt around London has meant that there has been no systematic assessment of the sustainability in economic, social or environmental terms of alternative development options such as incremental small scale suburban intensification, urban extensions on the London fringe, extensions to the major centres in the Wider South East, the creation of major new settlements within or beyond the Green Belt or residential or employment dispersal to other parts of the UK. Meanwhile, individual local planning authorities are wrestling with conflicting government guidance – guidance which sets higher housing supply targets based on an objective of stabilising house prices and new population and household projections which generate much lower housing requirement figures. Confusion reigns. The focus is on methodologies for arriving at housing numbers, with little or no attention being given to who the homes are for, who can afford them and whether they will meet appropriate sustainability criteria. ■

Duncan Bowie

Research associate, Bartlett School of Planning, UCL,
Convenor of London and Wider South East Strategic Planning Network

(WIDER) GRAND PARIS: CHANGES AND DEBATES FOR 2050

CÉCILE MAUCLAIR/L'INSTITUT PARIS REGION

Since 2010 the Paris Region has been engaged in an unprecedented development cycle stimulated by ambitious and innovative projects in a wide range of sectors. Space is being increasingly used up, pressuring transport systems, with social and regional disparities rising. Despite fragmented governance, the ambitions of the key players of the (Wider) Grand Paris are metropolitan in scope. Decisions for 2030 have mostly been taken, but what about 2050?

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Léo Fauconnet, Political Scientist and Urbanist, and **Paul Lecroart,** Senior Urbanist

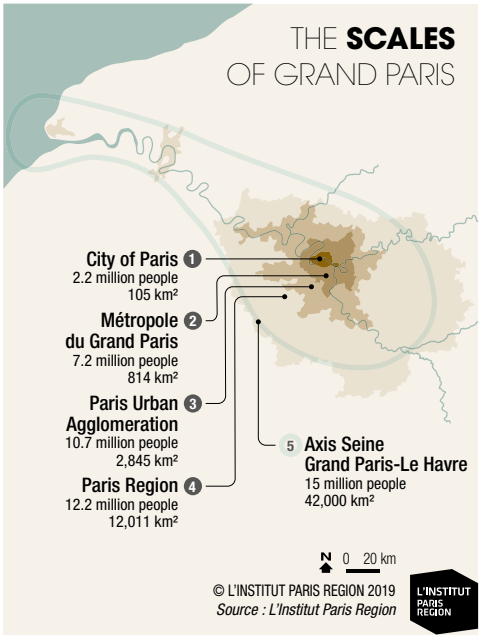
Paris is first a natural setting that has developed into a capital city: spanned by an axis crossing the Île de la Cité and connecting Mediterranean Europe to Flanders, the Seine has formed a large river basin. Urban growth began in this hollow, creeping outwards towards the Plaine de France and the surrounding valleys before climbing up to the plateaux beyond. The Seine remains, more than ever, the Grand Avenue of Grand Paris—and is somewhat neglected in places.

The geography creates a natural and manmade landscape structure that runs northwest to southeast: the historic axis from the Louvre to the Grande Arche, the Plain of Versailles, etc. This geo-historical structure shaped the 1965 Regional Master Plan, determined the location of La Défense and the new towns, and led to the layout of the suburban rail network (RER). But other processes were also at work: the radioconcentric growth of Paris as it overflowed its defensive walls, the industrialisation and parcelling of

the suburbs alongside the railways during the nineteenth century, the major post-WWII urban developments, and the more diffuse urbanisation of the 1980s.

URBAN REGENERATION AND THE METROPOLITAN AWAKENING

From the 1990s onwards, the regeneration of deindustrialised areas took over from urban expansion, and the centre attracted renewed attention. This dynamic was stimulated by a new generation of mayors who had cut their teeth during the decentralisation period, many of whom understood the importance of collective action: this was the case for the rebirth of the Plaine Saint-Denis which began in 1985, of the Renault plant in the 1990s, and of the Vallée Scientifique de la Bièvre, after 1997. In 2002-2007, public planning bodies were set up to manage the transformation of "*Strategic Areas*": Seine-Arche, Plaine de France, Seine-Aval, and Orly-Rungis–Seine-Amont. Some had the status of



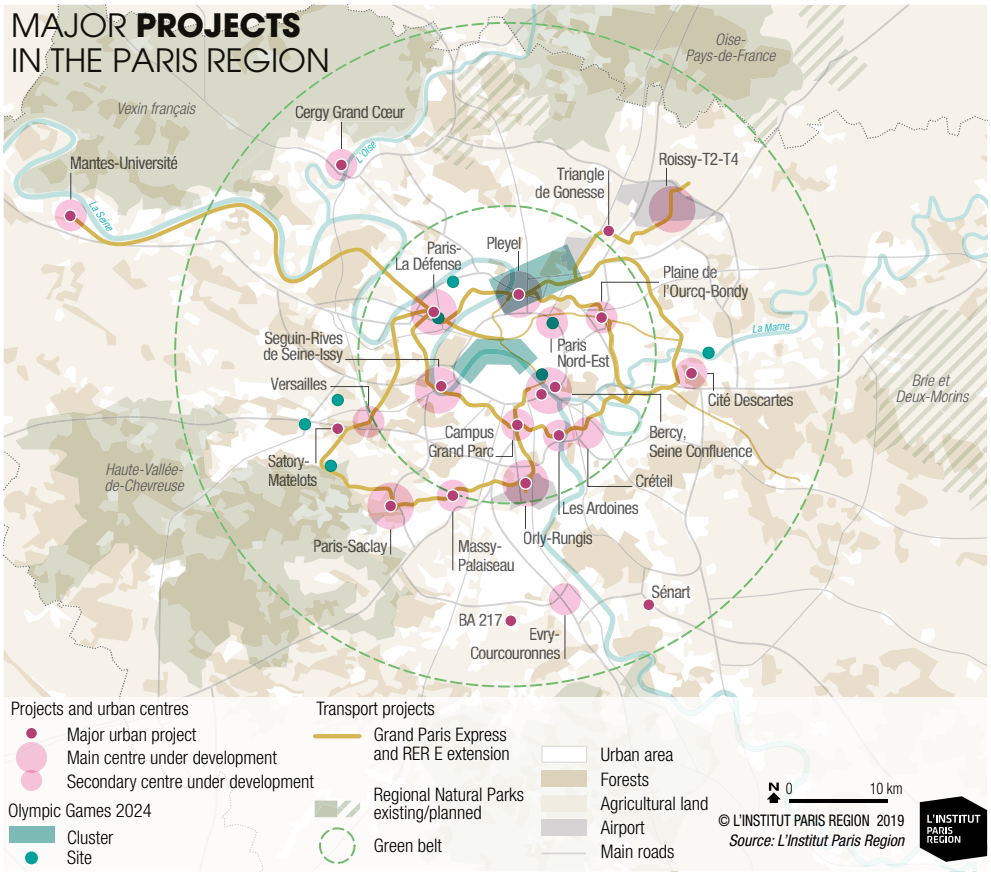
opérations d'intérêt national (OIN: key projects of national interest), all were supported both by the State and the Île-de-France Regional Council.
As a major driver of regional development, the Regional Council assumed new responsibilities from 1995 onwards: both as the public transport authority with Île-de-France Mobilités, and for planning, via the revised Regional Master Plan (SDRIF). A blueprint for the new Plan was approved in 2008.
As President of the Republic from 2007, Nicolas Sarkozy opposed this blueprint, which he felt lacked ambition. He appointed a Secretary of State for the Capital Region and in 2009 launched his "*Grand Pari(s)*[1]": an international call for ideas focusing on the future of Paris Region. This further raised awareness of metropolitan issues, which had been fuelled in 2001 by cooperation initiatives supported by the Mayor of Paris, Bertrand Delanoë: bilateral agreements with neighbouring towns, the *Conférence métropolitaine* in 2006, and the creation of the Paris Métropole consultative organisation in 2009[2].

GRAND PARIS AND ÎLE-DE-FRANCE 2030: A MARRIAGE OF REASON

An act of parliament on Grand Paris was passed in 2010. It created two tools: a public body for the Plateau de Saclay key project, and most importantly the "Société du Grand Paris" tasked with designing and building the ambitious Grand Paris transport network. Nicknamed "le grand huit"[3], this project for a rapid metro system designed to connect suburban economic hubs (Roissy, Orly, Saclay, La Défense, Cité Descartes) stood as the alternative to the "Arc Express" project mooted by the Regional Council, whose aim was to serve densely populated areas in the immediate suburbs. Both drew inspiration from the Orbitale network, which was proposed in 1990 by IAU (now L'Institut Paris Region) and included in the 1994 Master Plan, but was then shelved for financial reasons.
Following a public debate in 2011, an agreement was signed between the government and the Regional Council combining the two projects and launching the "Grand Paris Express". This was enshrined in the *Île-de-France 2030* Master Plan, which was finally approved in 2013, providing the regulatory framework for inter-regional planning initiatives. The Plan confirmed the principle of a "compact polycentric metropolitan region" and set goals for urban densification and the construction of priority housing around railway stations. By emphasising regional socio-economic balance and environmental transition, *Île-de-France 2030* anticipated the new post-Quito global agenda of 2016. Its implementation nonetheless relies on political visions that have since changed.

GRAND PARIS EXPRESS, THE 2024 OLYMPICS, RER E: TRANSFORMATIVE MEGAPROJECTS?

The planned Grand Paris Express is a driverless metro 200 kilometres long with 68 stations, made up of four new lines (15, 16, 17 and 18) and an extension to line 14. The idea is to interconnect the current radial network, which is centred on Paris, in order to facilitate inter-suburban journeys. Introduced gradually between 2021 and 2030, it should de-saturate the existing lines, offer an alternative to car use, and foster the development of dense, mixed-use urban centres.
As the future intersection of five metro lines and the RER D, Saint-Denis-Pleyel will become a hub of Grand Paris for the twenty-first century. As the heart of the 2024 Olympic and Paralympic Games, it will receive a powerful boost thanks to the riverside athletes' village, the water sports centre opposite the Stade de France and, a mere javelin's throw away, the Le Bourget-Dugny media village.
Initially encouraged by the state through regional development contracts, local authorities in the zone of influence of the 68 stations are vying with each other with projects for housing, facilities and offices[4]. The Grand Paris Express will be able to play its part as a "transformer" of metropolitan space all the more effectively if it comes in on schedule (anticipated costs have risen from 25 to 35 billion euros in 5 years), if it interconnects with the existing network, and if the urban development projects form part of



a shared, coordinated strategy. Other issues remain, however: the examples of Tokyo, Berlin and other cities show that the "network effect" is much more powerful when ring metro systems run in continuous loops with no disconnections. Some surburbs of Paris will also have to be better connected to the network.

Another major developmental event will be the completion in 2022-2024 of the east-west RER E regional rail link between Mantes/Poissy and Chelles/Tournan, forming a development axis between the hubs of Nanterre-La Défense, Porte Maillot, St-Lazare, Magenta (the *Gare du Nord 2024* project), Paris Nord-Est, Plaine de l'Ourcq and Val-de-Fontenay. With the extension of four metro lines, 10 standard and express tramways, and by 2025 the construction of the CDG-Express rail shuttle to Charles de Gaulle Airport, a revolution is afoot in the Paris region transport system. It should be combined with a new regional mobility strategy for 2030-2040, as the urban transport plan (PDU) expires in 2020.

BUILDING 70,000 HOMES PER YEAR...

The players of *Grand Paris* are also pushing to kick-start production of housing. In the 2000s, the 35,000 units built annually in the Île-de-France Region were insufficient to respond to real needs: the government included the goal of doubling this figure in the *Grand Paris* act of 2010. After a decade of efforts by the entire stakeholder chain, targets have been reached with work on almost 80,000 homes beginning in 2018[5]!

However, real growth in the housing sector is limited by the number of homes that are demolished or restructured[6]. Urban renewal programmes across the Region ushered in an exceptionally large number of renovation projects for high-rise social housing estates: between 2003 and 2015, 37,000 flats were demolished and reconstructed, and 84,000 were renovated.

Areas where housing is being produced do not map precisely onto dynamic areas with buoyant job markets. This means that 2/3 of new housing is built in the outer suburbs, increasing the need to commute.

ASSETS, WEAKNESSES AND GOVERNANCE

Compared to other large world cities, the Paris Region, in the heart of Europe, is exceptionally accessible, offers enviable quality of life, has a diversified and creative economy, and boasts unique cultural and educational assets. Somewhat compact, dense and diverse, Grand Paris is well known for its high quality public realm that makes it quite a "walkable" city. The fact that the Region is fragmented by transport infrastructures is, however, a handicap. Like New York and London, but to a lesser degree, Paris suffers from sharp socio-economic imbalances and social inequalities are acute, with a contrast between the prosperous southwest and the northeast, where there is a higher concentration of poor people and recent migrants. The number of homeless people is on the increase. Underprivileged areas are, however, relatively small and the level of inequality across the Region is considerably reduced by social benefits. Aware that the division of the Paris Region into so many different administrative areas, each with its own council, might adversely affect the implementation of the Grand Paris project, on 1 January 2016 the government enacted a law obliging local councils in the core area to group together within the *Métropole du Grand Paris,* a public inter-council cooperation body comprising the Paris Council and 130 councils in the surrounding area. The complex institutional system of the capital region (comprising the Paris Council, the suburban town councils, the *Départements,* the Grand Paris Metropolitan Council, the Île-de-France Regional Council, and the State) highlights the fact that metropolitan strategies necessarily involve a large number of players and take place on a range of different scales. There is no unified vision of the Region, but strategies, programmes and initiatives reveal a metropolitan project based on the (sometimes competitive) convergence of intense political energies and ambitions.

The *Métropole du Grand Paris* is in charge of running a project for the central area. The Regional Council is tasked with economic and territorial development ensuring a balance between the core area of intense metropolitan growth and the outlying areas. The State underwrites ambitions for the capital as the cultural and economic heart of France, and ensures that its climate and energy commitments are met. Along with local authorities, stakeholders and residents, these bodies will have to answer certain fundamental questions by 2050. Standing as it does at the crossroads of these ambitions, the (Wider) Grand Paris project still lacks a democratic dimension: further involvement of citizens in the process would be an essential success factor.

URBAN MOTORWAYS: FUTURE SHARED PUBLIC SPACES FOR GRAND PARIS?

This is, in summary, the question put to four multidisciplinary teams selected for the ambitious international competition on the future of roads in Grand Paris, launched in May 2018 by the *Forum Métropolitain* and its partners: the Paris Council, the Île-de-France Regional Council, the State, the Metropolitan Council, three *départements* and eight administrative areas, with support from APUR and IAU (now L'Institut Paris Region). Exhibited to the public from June 2019 onwards, the teams' proposals will fuel discussions on the future of the *boulevard périphérique* [Paris ring road] and initiatives to be put in place by 2030 and 2050 in order to optimise the use of motorways, integrate them more effectively, and reduce their impact on the environment, in the framework of a sustainable economic model. These approaches will be closely linked to the reinforcement of a multimodal transport system offering attractive alternatives to solo car use. The transformation of these infrastructures into 'metropolitan avenues' forms part of a global movement to reclaim the 'car-oriented city' of the twentieth century, as shown in studies by the IAU on New York, Seoul, Vancouver and others*. ■

*** Paul Lecroart, *Reinventing Cities: From Urban Highway to Living Space*, Urban Design Magazine, Issue #147, Summer 2018.**

(WIDER) GRAND PARIS 2050: SUBJECTS OF DEBATE

Suburban growth has slowed over the past fifteen years: consumption of greenfield land is at its lowest historic level, and construction dynamics focus on brownfield recycling. According to the latest forecasts, the population of the Île-de-France region is set to rise to around

BLUE-SKY THINKING: INNOVATIVE PROJECTS FOR GRAND PARIS?

Since "*Reinventing Paris*" initiated by the Paris City Council in 2014, the principle of calls for innovative projects has spread like wildfire through the metropolitan region ("*Inventing Grand Paris*"), along the river ("*Reinventing the Seine*") and as far as Vancouver and Auckland (C40's "*Reinventing Cities*"), suggesting what a "(Much Larger) Grand Paris" might look like: 150 proposals have been made involving almost 250 hectares of land in 2018, and private investors have promised 7 billion euros to the Grand Paris Council. Beyond the financial optimisation of public sites by inviting the private sector to participate in their development and management, the idea is to imagine a city of tomorrow by bringing together investors, developers, architects, start-ups and users to find solutions to the ecological crisis and foster the emergence of a "sharing society". These calls for projects spark enthusiastic involvement and fertile interactions leading to original projects…that will have to be brought to fruition. They take place in parallel with well-established calls for projects for "*Eco-Neighbourhoods*" supported by the State and "*Innovative and Sustainable Neighbourhoods*" initiated by the Region.
They are also a legacy of the "*Call for Metropolitan Initiatives*" launched by Paris Métropole in 2010 following the IAU workshops on the German IBAs (*Internationale Bauausstellung* or international architecture exhibitions). Unlike the IBAs, however, each site involved in a call for innovative projects tends to act alone, and struggles to fit into a strategic vision that remains to be formulated. As IBAs develop in France, the magic formula of a project process that draws from public debate, connects the region, and builds local and regional solidarity, still remains to be invented. ■

13.3 million by 2035, about 1.1 million higher than today. The Region will have to provide these people with diversified employment, affordable housing and efficient transport. Public opinion is increasingly sensitive to encroachment on farmland and nature areas, as opposition to the Saclay and Triangle de Gonesse urban projects has shown. A clearer strategy for the Green Belt would give the city's outlying areas a new status. Reinforcing the urban green-blue grid will also be crucial in order to improve biodiversity, cool down the core area, and enhance quality of life by 2050. The principle of urban densification is still hotly debated, however: Paris seems to be allergic to the kind of vertical urban development seen in Shanghai, Istanbul or London. Extending the Paris model of urbanity to its outlying areas, to the detriment of industry and detached housing, calls for a shared vision. In the light of Brexit and on-going conflicts in Amsterdam, Barcelona and New York, the long-term impacts of major international investments, command functions, and mass tourism are also worth discussing.
Beyond this, the "*French passion*"[7] for equality between regions will continue to challenge the development of the Paris metropolitan region, which will take place to the detriment of its broader Region (the Paris Basin), other major cities, and the mythologised rural provinces. This means that the social metropolitan question in Paris—the acknowledgment of its role in welcoming new populations and its ability to offer satisfactory, fair living conditions to different categories of residents who drive the French economy—can only be approached within a national framework.
Recognising the "quality of life for all" criteria when assessing attractiveness, and the ability of the capital of France to respond to the commitments of the Paris Agreement, encourage deeper thinking on mobility systems and economic models. Digital revolution and automation open new horizons in terms of work organisation and modes of consumption, which must be clarified. Changes in logistics could lead to congestion and pressure on agricultural areas in the absence of clear choices regarding the transition to a circular economy and green transport. Rethinking the future of the motorway network could be the first step, provided we think in parallel about the development of an intermodal mass transport system. ■

1. Translator's note: "Grand Paris" means Greater Paris; "grand pari" means "great challenge".
2. Now Forum métropolitain du Grand Paris, it groups 200 local authorities, including the Regional Council and Paris.
3. Translator's note: "le grand huit" means "the roller-coaster" (literally "the big figure-of-eight").
4. 3,300 hectares of urban projects, Observatoire des quartiers de gare du Grand Paris Express 2014-2017, Apur.
5. DRIEA Île-de-France, La construction de logements en Île-de-France, February 2019.
6. DRIEA and DRIHL Îdf, Apur, Insee, IAU îdF, Les conditions de logement en Île-de-France, 2017 (2013 survey).
7. Philippe Estèbe, L'égalité des territoires, une passion française, Puf, 2015.

TOKYO 2050: VISIONS FOR A STRUGGLING GIANT

Tokyo's urban transformation relies on both a local and a national planning model designating urban cores that enable economic and urban development interconnected through the most efficient transportation systems. This circular model is set to help the Asian megacity tackle the demographic and economic problems that Japan will be facing in the upcoming decades, way beyond the 2020 Olympic Games.

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Prof. Hiroo Ichikawa,
Professor, Meiji University (Emeritus)
and Teikyo University
Executive Director,
The Mori Memorial Foundation

ALAIN GUILHOT/DIVERGENCE IMAGES

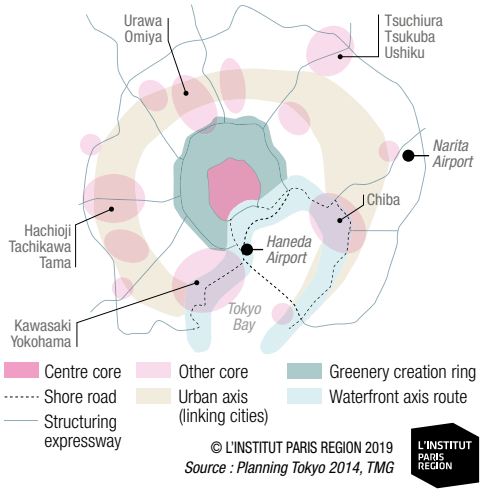
In order to understand Tokyo's and Japan's visions for 2050, it is necessary to highlight the economic and demographic projections for this decade. In its *Grand Design of National Spatial Development* policy report (2014), the national government notes several key challenges facing the country: decreasing population, low-fertility, extreme aging, natural disasters, and increased inter-urban competition. Major urban hubs will see small increases in population as regional migration continues. The Japanese economy will undoubtedly face a heavy burden as consumption levels fall and the available workforce decreases. Given these troubling forecasts and the solutions being sought by the Japanese government, where does Tokyo fit within Japan's national planning and what role will the megacity occupy? How can urban planning lead to a more promising future for Tokyo?

TOKYO'S CIRCULAR RAIL-ORIENTED PLANNING MODEL

Tokyo's current planning model revolves around the concept of the "Circular Megalopolis" which forms the base of urban development strategies for the city[1]. Its main idea is an organized urban structure: local centers acting as compact cores exhibit the essential urban functions; connected through strong transportation, commercial, residential, and mixed-use development occurs mainly around urban rail stations. This structure facilitates the delivery of services throughout the city, enhancing the growth of cores with unique economies or specializations, and promoting exchange and collaboration between localities and industries.

In 2017 the Tokyo Metropolitan Government's Bureau of Urban Development published its *Grand Design for Urban Development*. In this context, the *Circular Megalopolis* model got updated

TOKYO **CIRCULAR MEGAPOLIS**



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Source : Planning Tokyo 2014, TMG

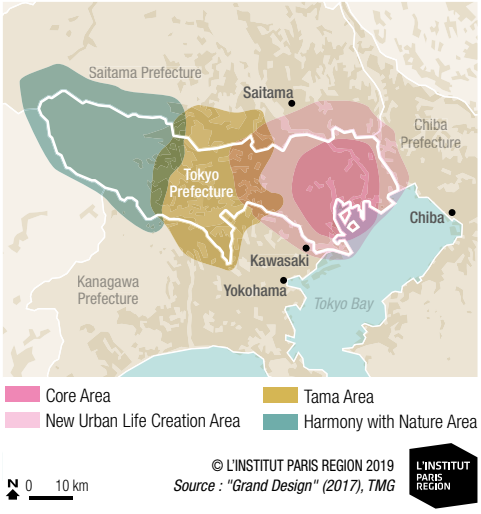
and enlarged to a larger scale in order to better include the different regions within the Greater Tokyo Area (Kanagawa, Saitama, and Chiba Prefectures), placing new emphasis on the specialized role of each sub-region. The *Grand Design* describes the current planning goal as "creating a highly developed, mature city that grows sustainably in harmony with the environment while employing the latest technology". The notions of maturity and technology reflect the recognition of demographic challenges Tokyo will face and the importance of using urban planning tools to tackle those challenges.

The *Grand Design* defines the administrative area of the Metropolitan Government itself as one of the sub-regions and divides Tokyo into four spatial areas, and two zones—each with a specific urban development focus.

1. The *Core Area* covers the most central wards and the waterfront area. It forms the economic heart of Tokyo. Throughout new road and rail links, including to the Tokyo International Airport at Haneda, the Core Area maximizes the potential for international exchange. It covers Tokyo's *National Strategic Special Zones* and *Special Zone for Asian Headquarters* aimed at attracting high value companies with incentives such as tax reductions, subsidies, and deregulated immigration and investment procedures.
2. The '*New Urban Life Creation Area*' includes several compact cities surrounding regional transport hubs. These traditionally suburban areas will take on more urban functions to provide a well-serviced and connected network of livable neighborhoods.
3. The *Tama Area* will offer improved living conditions, urban functions, and connectivity. It covers the *Tama Innovation Exchange Zone,* promoting research and collaboration between universities, laboratories and companies to facilitate technology innovative.
4. The '*Harmony with Nature Area*' is mostly about the mountainous Western part of Metropolitan Tokyo, providing ample green space and natural recreation opportunities to Tokyo's inhabitants.

Tokyo's primary strategy will be to harness the existing domestic attractiveness while boosting its international magnetism through the concentration of urban functions in the compact core, as to be seen in the following project examples, led by the long-term visions following the Olympic Games in 2020.

THE **GRAND DESIGN**
FOR METROPOLITAN TOKYO



VISIONS AND STRATEGIES FOR THE POST-OLYMPIC GAMES PERIOD (2020-2040)

The 1964 Olympic Games drove Tokyo's development as a modern city forward, bringing new infrastructural capacity with the completion of the high-speed train (Shinkansen) and introducing new urban developments. The 2020 Olympic Games will display Tokyo's advancement as a mature city with vitality. By reusing existing facilities and locating the bulk of sport events within the core and along the waterfront, accessibility will be kept high. The Athletes Village on the island of Harumi will be transformed into a mixed-use residential district in the post-Games period, expected to provide 5,650 new housing units. For the Metropolitan Government, the Games provide a platform to display its goal of transitioning to a highly-developed

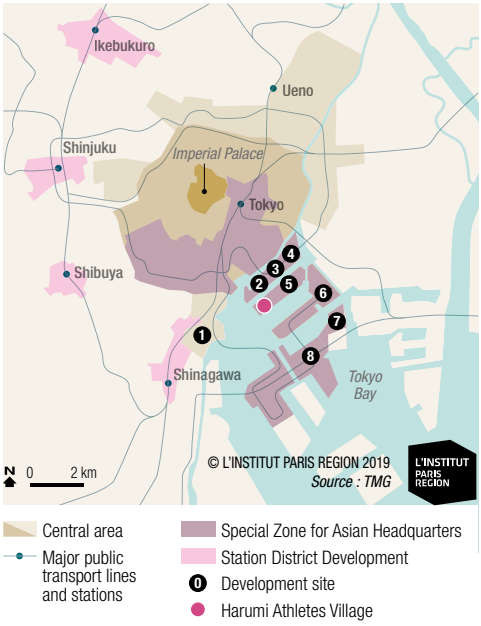
TOKYO WATERFRONT

The development of Tokyo Waterfront, reclaimed form the bay, continues to expand inward to central Tokyo. Several sites have been developed starting with the areas closest to the center: Shibaura ❶, Kachidoki ❷, Tsukishima ❸, Tsukuda ❹, Harumi ❺, Toyosu ❻, Shinonome ❼ and Ariake ❽. The overall area began to develop in earnest from 1990, continuing to densify as its attractiveness has slowly grown. The largest area of undeveloped land in the district of Harumi will serve as the Olympic Village, with a significant portion of its energy needs deriving from hydrogen power —in line with the Japanese Government's strategy of developing safer, cleaner, and reliable energy systems. Additionally, the district of Kachidoki gains importance throughout connection to central business districts by a circular road. ■

metropolis in harmony with the environment, while also acting as a catalyst for tackling socio-economic and demographic challenges over the next 20 years. Along with the creation of major infrastructure projects, such as new access roads and train lines connecting the waterfront to the core, several large-scale urban redevelopment projects, especially within the *Special Zone for Asian Headquarters,* will bring new opportunities for both foreign business and tourism. Globally connected urban functions will increase within Tokyo's central districts, as well as facilities for local residents.

When looking at the post-Games period though, several challenges can be identified. One is ensuring sustained economic growth in the years following the Olympics, as the often-associated economic bump historically fails to translate into long-term growth. In the past 30 years, only Atlanta (1996) and London (2012) succeeded in maintaining an upward trend, while other host cities gradually tapered and fell. Economic growth and productivity in Tokyo's case will also be influenced by the demographic realities in Japan. But while Japan's population is decreasing, Tokyo's population is still experiencing growth, especially within the central wards. With the completion of transportation and urban

MAJOR URBAN **DEVELOPMENT PROJECTS**



SHINAGAWA

The major urban project in the district of Shinagawa envisions to create a dense international exchange hub with the opening of the new Shinagawa JR train station for 2020 designed by architect Kengo Kuma. Around half of the width of the current railway area will be redeveloped to connect two major main roads transverse to the railways, and to create new public spaces and high-rise residential condominiums. The main focus of the project lies in the improvement of Shinagawa's business environment and transportation infrastructure, rather than creating a sustainable and green environment. The overall construction is aimed to continue past 2030. ■

TOKYO FUTURE SCENARIOS 2035

Looking to the future, threats to Tokyo's development are outlined in 2014 in a study by the Mori Memorial Foundation's Institute for Urban Strategies. Titled *Tokyo Future Scenario 2035,* the future of Japan's capital is here considered in the context of internal trends as well as international competition. Several "Key Driving Forces" are identified along with various specific actions allowing us to formulate strategies leading to positive outcomes. Yet, in view of the threats of failures of deregulation, promoting competitiveness and reforms of the social structure, negative scenarios were also outlined.

"Stormy" scenario

Tokyo's population peaks in 2050 and then declines, working-age population decreases, while the number of the elderly rises. The Growth Domestic Product (GDP) continues to fall, business activity grinds to a halt and tax burdens on citizens grow larger. Large-scale redevelopment does not happen due to a lack of funds. A long predicted earthquake strikes directly below Tokyo hitting the population numbers hard. As Tokyo loses its economic attractiveness, it becomes isolated from the international network. The unemployment rate rises and universities shut down due to managerial problems.

"Rainy" scenario

Tokyo has deregulated but fails to fully promote competitiveness and specialisation. The city suffers from economic and income stagnation, forcing people to move to the suburbs where the cost of living is cheaper. As much of the land in Tokyo's inner city is bought up for speculative purposes, the urban structure falls into disarray as landowners use their land haphazardly. Many buildings are left abandoned as the city is too busy assuring maintenance and management. Due to indiscriminately increasing the number of foreign workers, an ill-defined sense of openness, polarization arises between workers.

"Cloudy" scenario

Tokyo develops its talented human resources from within and outside of Japan and makes active use of the elderly population. GDP and productivity increase first, but start to shrink thereafter. The elderly employment lets personnel costs soar, leading to a weakening of Japanese firms in terms of global cost competitiveness. Companies are unable to retain talented young workers and the inheritance of Japan's manufacturing skills comes to an end. Tokyo loses its status on the global stage. Large-scale repairs of urban space and environment fail in their execution, as the overall urban area continues to expand. The number of immigrants increases dramatically and a mosaic of poorly integrated communities emerges.

"Blue Sky" scenario

Tokyo avoids becoming the back-office of Asia and instead comes to lead the Asian region. The labor participation rate rises, along with overall productivity, enabling stable economic growth and an increasing GDP. Tokyo becomes a showcase of leading-edge urban business and industries, which combine expertise in advanced transportation, information, energy conservation and security systems. Tokyo makes use of Japanese technology creating a universal standard. Traffic and environmental burdens are greatly reduced and a mix of skyscrapers and greenery emerges. The immigration policy allows society to transform into one where values are shared by all. ■

development projects during the post-Games period, as well as the inclusion of waterways reactivation and urban greening as a part of these projects, Tokyo aims to continue its progression as a liveable, economically robust city.

GREATER TOKYO IN JAPAN AND ASIA TO 2050

According to the *Regional Plan* (2005) and the *National Spatial Planning Act* (2006), the national government aims for autonomous regional development by establishing eight regional 'planning blocks' throughout the country. Tokyo, for example, is placed within the '*National Capital Region block*' which includes the prefectures within the Kanto region and Yamanashi Prefecture (38 million people). Each block would develop as a regional entity, providing dynamic functions and industries, international access, and facilitating the interregional exchange of people, goods, and information. The organization in regional blocks is now seen as key to overcoming the national challenges associated with depopulation and aging.

Much like the circular megalopolis structure utilized for Tokyo, albeit on a larger scale, national plans define that regions must concentrate development in 'compact' clusters while 'networking' across regions (and internationally) through transportation linkages and collaboration. In Tokyo's case, the potential opportunity stems from increased economic and industrial specialization across the adjoining prefectures that make up the *National Capital Region,* also improving ts networking with the nearby regional blocks. This may be further enhanced by the completion of the new high speed train, Chuo Shinkansen, under construction: from 2027, the new maglev (magnetic levitation) line will connect Tokyo to Nagoya in about 40 minutes, and later to Osaka in about 60 minutes, reaching a speed of over 500 km/h. The Chuo Shinkansen has the potential to further compress and network the economic and productive heart of Japan —bringing populated centers and employment opportunities closer together.

To achieve its goals of regional promotion and a balanced spread of population and economic opportunity, strategies seek to "rectify the overconcentration of functions in Tokyo" by resolving the imbalance between urban and non-urban areas. But this could weaken Tokyo's economy and ability to compete globally with other major cities. Tokyo performs well in city rankings, but, it is not immune to competition from regional cities like Singapore, Seoul, or Shanghai, nor can it remain competitive with London or New York without constant improvement. Tokyo's regional specialty is its concentration of functions, services, industry, and regional / international transportation links. Rather than weakening Tokyo's unipolar position within Japan, the capital should be strengthened by increasing links and cooperation between regions while retaining its ability to compete globally. ■

NATIONAL REBALANCING POLICIES ARE SEEN LOCALLY AS A THREAT TO TOKYO'S GROWTH

FURTHER READING

GRAND DESIGN OF NATIONAL SPATIAL DEVELOPMENT TOWARDS 2050 (PROVISIONAL TRANSLATION)
Ministry of Land, Infrastructure, Transport and Tourism (MLIT), Government of Japan, 2014.

TOKYO FUTURE SCENARIO 2035
Institute for Urban Strategies, Mori Memorial Foundation, 2014.

URBAN DEVELOPMENT IN TOKYO 2016
Tokyo Metropolitan Government, 2016.

1. Cf. Lecroart (Paul), *Tokyo. Stratégies de développement urbain de la région métropolitaine,* Mission Report, Iaurif October 2002.

BEIJING 2016-2035: THE BIG TURN?

As the Chinese Capital, Beijing's urban development is of great significance for the People's Republic of China.Beijing suffers from the so-called "big city disease", i.e. traffic congestion, urban sprawl and massive air pollution. Throughout the New Master Plan, a national strategy demands for the first time that planning be carried out on the scale of the mega-region, moving out non-capital functions to peripheral new centres. Will it work?

****

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Shi Xiaodong, Vice President, Beijing Institute of Urban Planning and Design (BICP),
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and **Wu Yimin,** Engineer, BICP

BEIJING MASTER PLAN 2017-2035,BICP

At the 18th National Congress of the Communist Party in 2012, China's General Secretary Xi Jinping presented his new governance concepts, thoughts and strategies for the rejuvenation of the Chinese nation. The *Two Centenary Goals* have been set: (1) to finish building a moderately prosperous society by the centenary of the Communist Party of China in 2021; and (2) to turn China into a modern socialist country that is prosperous, strong, democratic, culturally advanced, and harmonious by the centenary of the People's Republic in 2049. These goals have a major impact on all different sectors and in particular on the future urban and rural planning and construction practices of the Chinese Capital, Beijing.

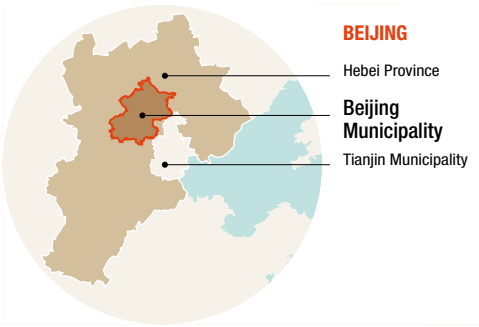
CHINA'S URBAN DEVELOPMENT SITUATION AND MEGACITIES PROPOSITION

China's rapid urbanization has entered its middle and late stages. As economic growth is slowing down, the development of the most cities is more mature, meaning that the goals have changed - from large-scale expansion to thematic urbanization. In China, the transformation of the urban

Beijing's challenges for 2035: controlling urbanisation and restoring a degraded environment.

growth model has become a major topic and megacities (such as Beijing and Shanghai) have to take the lead in reform and innovation during this period of transition. On the inside, their task is to strive to resolve their own *big city disease*, i.e. traffic congestion, expensive housing, air pollution, urban sprawl and other illnesses that cities are facing. In order to do so, they should seek to explore an optimized growth model for densely populated and economically developed areas; to improve the quality of urban development and competitiveness; and to improve the urban governance system.

In January 2005, the State Council officially approved the Beijing Master Plan (2004-2020). For over 10 years, the capital of China has maintained steady and rapid economic and social development, as Beijing successfully hosted the 2008 Olympic Games, coped with the international financial crisis and held the East-Asia-Pacific Summit (APEC) as well as the *One Belt and One Road* Summit. Today, Beijing has become one of the most dynamic cities with great potential, not only in China but also in the world.



NEW CHALLENGES AND OPPORTUNITIES FOR BEIJING

However, Beijing has also accumulated some underlying contradictions and problems, especially the increasingly prominent contradiction between population, resources and environment. By the end of 2015, the city's permanent resident population had reached 21.7 million, while 46% of the plains have become built-up land for urban and rural construction. The city's per capita water resource is far lower than the international standard for absolute water

A state-driven metropolitanisation process

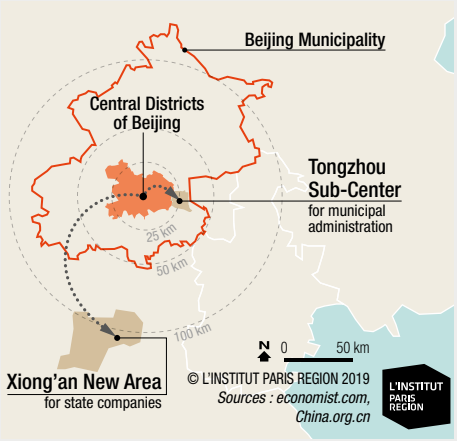
Land is what fuels urban growth in China. Three decades of economic reform have fostered very rapid urbanisation* and the rise of gigantic cities, now slowed by less buoyant economic growth. The liberalisation of urban property markets and the ambivalent status of rural land have put cities in debt: to finance themselves, they borrow, buy and resell land for urbanisation. This speculative system consumes space and destabilises regions both socially and environmentally. Beijing is no exception.

In 2015, to 'rationalise' its territory and compete with the regions of Shanghai and Canton, Beijing set up the *Jing-Jin-Ji* (Beijing-Tianjin-Hebei Province) plan. This national interest scheme, which involves reorganising economic and industrial functions on a macro-regional scale and the capping of the number of residents in the municipality of Beijing, forms the basis for the 2016-2035 Master Plan.

The scheme is based on the principle of "less is more"** (economic use of land and resources; stabilised population) and of a clear separation between capital city functions and ordinary functions. Central Beijing will be home to the political organs of government; Tongzhou in the eastern suburbs, where over a million public-sector employees are being transferred, will host municipal administration; and the Xiong'an New Area in Hebei, 100km south of the city, will accommodate state companies. Since 2016, to reduce the population in the six central districts (the goal being a reduction of 15% by 2035) and meet the requirements of the "political" status of central Beijing, the municipality has been restructured around a controversial project that involves evicting the migrant population that has settled in the capital.

The rapid metropolitanisation process in which the city is engaged and its two-pronged state and municipal governance create paradoxes that are now part of its DNA. One example is the raft of major social innovations aimed at protecting historic neighbourhoods such as Dazhalan and Shijia Hutong, where projects involving the participation of residents, architects and artists are frustrated by the eviction of migrants and the closure of their shops, which gave Beijing its vitality. Such paradoxes reflect the conflict of urban policies and state measures supporting the reinforcement of Beijing's capital status. ■

RELOCATION
OF URBAN FUNCTIONS



Jérémie Descamps,
Urban planner, director of Sinapolis, Research Online Platform on Chinese Cities

FURTHER READING
www.sinapolis.net
www.modumag.com

*The urbanisation rate rose from 18% in 1980 to 57.8% in 2018.
**Descamps J., Xu S., *Promoting 'Less is More': Beijing New Urban Master Plan,* Modu Magazine, 4 May 2018.

scarcity. Although air quality is improving, the average annual fine particulate matter concentration (PM2.5) in 2016 is too high. The housing supply can hardly keep up with fast-growing demand.

At the same time, Beijing's development has been facing new situations and major opportunities, including the Beijing-Tianjin-Hebei strategy, the new administrative sub-center in Tongzhou and the Hebei Xiong'an new area development. The preparations for the 2022 Winter Olympics and the ambitions of the *One Belt and One Road* construction will also exert a significant impact on the city in the future. Beijing officially launched a new round of drafting a new Master Plan in 2014, enabled through the work of 200 experts and scholars in a comprehensive research programme.

RENEWED NATIONAL IMPORTANCE FOR THE CHINESE CAPITAL

In June 2015, the CPC Central Committee and the State Council approved the *Programme for Coordinated Development of Beijing, Tianjin and Hebei*[1]. This programme intends to make this mega-region a world-class city agglomeration by 2020, comprising the province of Hebei, the municipality of Beijing and the neighboring municipality of Tianjin. As a major national strategy, it aims at the relocation of Beijing's non-capital functions out of the city, including the limitation of the permanent resident population to 23 million, the reduction of the population in the central urban area (Beijing's six central districts) by about 15 percent, and the alleviation of the big city disease issues.

For the first time in history, Beijing is to follow an upper-level programme with requirements to be implemented in the capital's new Master Plan. But along with this national programme, another event has greatly influenced the new Plan: On February 24, 2017, General Secretary Xi Jinping inspected Beijing and gave important instructions on further improving Beijing's urban planning and construction. Xi pointed out that Beijing's urban planning should consider the question of "what kind of a capital China needs and how to build it". This led to a modification of the existing draft of the Master Plan, trying to optimize the planning aspects so that they provide an answer to this question. In September of that same year, the CPC Central Committee and the State Council approved the Beijing Master Plan (2016-2035). Today, the development process of Beijing closely aligns with the national process. Finally, the New 2016 Master Plan (The Plan) will be preliminarily implemented in 2020 and be valid until 2035, but its impact will extend to 2050 as it connects to the *Two Centenary Goals*.

The Plan is centered on the implementation of a new strategic role that has been attributed to Beijing. It is defined as the capital of four clusters: political, cultural, international and innovational. The new development goals align with the ambitions of a better national capital with a broader and long-term vision: to build the capital of a greater China achieving the rejuvenation of the Chinese nation, and a world-class harmonious and liveable capital.

A NEW SPATIAL STRUCTURE FOR BEIJING: MOVING IN/OUT URBAN FUNCTIONS

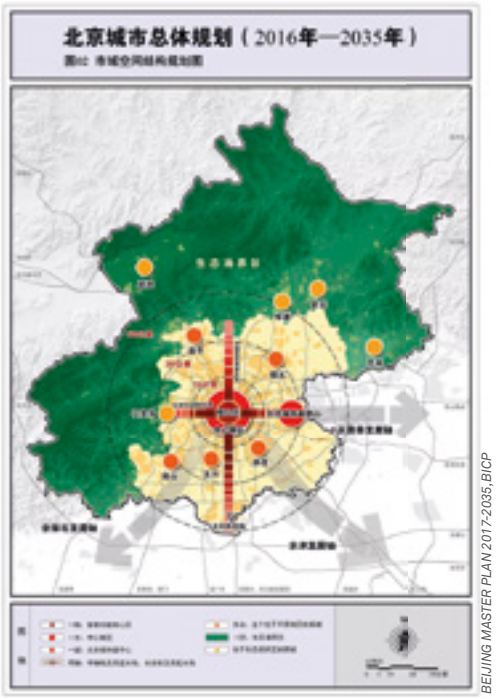
Over the past decade, Beijing has relied on land- and population-driven GDP growth, and its development remains relatively extensive. Under the constraints of resources and environmental carrying capacity, the city should adapt a development mode that is more intensive and efficient. The Plan focuses on relocating Beijing's non-capital functions, enhancing capital functions and improving environment in the spatial layout. It proposes a new spatial structure of the city as "*one core, one central urban area, one sub-center, two axes, multiple new towns and one ecological conservation area*". Each area has different goals. Examples:

1. The *Core Area* will experience a profound restructuration of urban functions. The proposal is to move out the regional commodity trading market and large medical institutions. Emptied space should be reused for capital functions, green space, water systems and service facilities for citizens.

2. The *Central Urban Area* is to be upgraded following the relocation of non-capital functions and reduction of population density, manufacturing and warehousing land, and to improve the utilization efficiency of industrial land. Vacated space should be reused as a priority for central government and important state affairs, as well as the improvement of innovation and advanced industries, and cultural and service functions.
3. The *Tongzhou Sub-Center*, currently under construction, is set to be the new center for the relocation of municipal functions. It is located in the east, 20 km from the central districts within the boundaries of the municipality.

While past master plans of Beijing have already attached great importance to the relationship between city and region, the 2016 Master Plan finally extends a focus on coordination for the whole *Beijing-Tianjin-Hebei* region. Beijing counts as the *One Core* within the region, engaging in closer cooperation with Tianjin port-city and Hebei province.

In order to manage the relocation of Beijing's non-capital economic functions, a new town is proposed in the south, outside of the boundaries of Beijing in Hebei Province: The *Xiong'an New Area.*



BEIJING MASTER PLAN 2017-2035, BICP

The new master plan focuses on the protection of the mountainous and natural areas in the north and the reinforcement of the two central historical axes that extend into the landscape.

PLANNING RESTRICTIONS, LAND USE, HERITAGE AND LANDSCAPE DESIGN

The most prominent problems in Beijing are the pressure on resources -especially water resources, clean air, and continuous nibbling of ecological land. Thus, the new Master Plan draws *three red lines:* the city scale (maximum population), the ecological control boundary and the urban growth boundary.

Population ceilings are set according to the maximum capacity of water resources. The maximum resident population of Beijing (23 million) shall remain at this level for a long time after 2020. Since the founding of People's Republic of China, previous master plans for Beijing emphasized controlling scale, but the reality is that growth and sprawl have become the normal state. The excess of power boundaries creates a space for speculation and rent-seeking on fragmented plots. The new Plan reduces the urban and rural construction land.

Currently, Beijing has too much production and employment space with insufficient living space. In comparison with other metropolitan areas, such as Paris and Tokyo, the current residential land/industrial land ratio in Beijing is fairly low. Whereas Tokyo and Paris have a ratio of about 1:3-1:4, Beijing is at 1:1.3. The Plan aims to reduce the production space, moderately raise the proportion of the land for residential, and improve the ratio to above 1:1.5 in 2020, and 1:2 in 2035.

Along with these ambitions, the Plan proposes to greatly improve ecological scale and quality, to develop an urban green space system, to increase the forest coverage rate, and to improve the per capita park and green land area in the built-up areas; 95% of the built-up areas should be within 500 meters coverage of park and green land. The Plan promotes the coordinated development of water and the city, the improvement of the jobs-housing balance, and the coordination of the development of underground and aboveground spaces.

PAUL LECROART/L'INSTITUT PARIS REGION

The protection of Beijing's last traditional Hu Tong areas is a new feature of the new Master Plan.

It further extends the connotation of historic and cultural protection. In addition to the recent focus on the old city, by the renewal and protection of the traditional *Hu Tong area*, the Plan suggests the comprehensive protection of Beijing's natural and cultural setting, defined as the *three hills & five gardens* region, as well as the *Great Wall cultural belt* and other regional features. For the first time the Plan uses a separate section to discuss urban design and cityscape. It envisions a landscape control system that covers guidelines for building height, city skyline, bird-view corridor, city rooftops, city color, etc.

IMPLEMENTING THE VISION AND PLANNING OBJECTIVES

Beijing's new Master Plan sees urban development as an organic whole. It follows the coordinated requirement of political, economic, cultural, social and ecological development. The effective alleviation of the *big city disease* and the construction of a modern megacity governance system are fundamental for the realization of Beijing's planning blueprint at a high level. The Plan responds to the people's concerns, enabled through special research on land sprawl, traffic jams, housing price surges, air pollution, municipal infrastructure and public safety problems, and by putting forward systematic solutions.

Since the approval of the former 2004 Master Plan, the Beijing urban and rural planning department has set up multiple planning and coordination platforms. However, the implementation of the 2004 Plan remains problematic. The 2016 Plan proposes a multiple-in-one implementation and control system, carrying out evaluation mechanisms and setting up a supervision and accountability system to deal with violations of plans and poor implementation.

The CPC Central Committee and the State Council approved the Beijing Master Plan (2016-2035) considering that it is "of great significance to promote comprehensive, balanced and sustainable development of the capital." While the 2016 Plan is highly appraised, we should not forget what the famous Chinese planner and professor Wu Liangyong said of the 2004 Plan: "The completion of a new master plan of Beijing is also the beginning of new problems." In the future, Beijing will continue to explore methods for the implementation of the Plan and other urban planning and construction management, march towards the vision of a world-class harmonious and liveable capital, and achieve the *China dream* as well as the *two centenary goals*. ■

1. China's Jing-Jin-Ji regional economic strategy: 2016 progress update, JLL, *The Economist*, 2016

LIVEABILITY VERSUS DENSITY IN **HONG KONG**

Hong Kong's economic position has been driven in the last decades by a high density land development model relying on a mass transit network combined with a real estate value-capture system. This high-rise living model raises questions of liveability, social equity and resilience. The Hong Kong 2030+ Plan requires more space: Can this go on for ever or is a paradigm shift needed? Having inspired Vancouver, Shanghai and Beijing, will the City-State, under tight control by Beijing, remain a reference for other cities in the future?

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Between sea and mountains, Hong Kong has become the icon of the ultra-dense city.

RATNAKORN PIYASIRISOROST/GETTY IMAGES

Urban planning in Hong Kong arises from its unique topographical and historical circumstances and the land management and governance responses to these. But surprisingly, the sub-tropical 'city-territory' of nearly 7.5 million people - a Special Administrative Region (SAR) of China since 1997 - has more to teach others than one might think.

HONG KONG AND ITS PLANNING

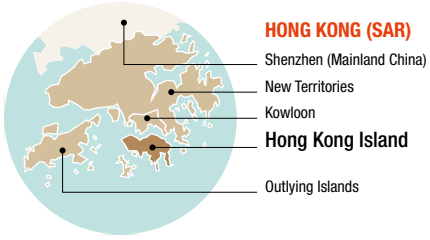
Hong Kong's planning system is essentially still the one inherited from pre-1997 British rule. The Government's Planning Department is tasked to oversee land use, planning and associated issues. A major feature is that all land is owned by SAR government and leased for development for time-limited periods. Development itself, however, is mainly reliant on the private sector, a major beneficiary of Hong Kong's famous 'pro-market, light regulation' approach to governing. Importantly, the Lands Department's role is not only the stewarding of land resources but the extraction of maximum land value at point of lease sale. This has resulted in a drive for ever more dense development; Floor Area Ratios (FARs) of 8 and above are not uncommon. Without the existence of an elected planning authority, the Town Planning Board is appointed, as a mechanism for channelling citizen objections, the primary limitation on development is that still-challenging terrain.

Hong Kong is often cited as the epitome of a high-density city with a mass transit rail system (MTR) that enables one of the highest proportion of trips-by-public-transport in the world. Two features of the MTR are notable. First, the MTR 'rail and property' development model, which maximises both the capture of land value uplift associated with the new rail infrastructure and their stations, has been a primary logic in Hong Kong's development pattern since the first line in 1979. The government provides MTR with land "development rights" at stations or depots along the route. To convert these development rights to land, MTR pays the government a land premium based on the land's market value without the railway. This model has enabled an extremely dense yet tentacularly-shaped metropolis to

PAUL LECROART/L'INSTITUT PARIS REGION

Olympic Station (viaduct) in Kowloon and its surroudings illustrate Hong Kong's "rail and property model".

A VERY SHORT HISTORY OF A UNIQUE LANDSCAPE



Hong Kong Island and the Kowloon peninsula, both ceded to the British in the mid-19th century, form the administrative and commercial centrality of the SAR to this day. The settlement patterns began where there was buildable land, highly limited on the Island, slightly more extensive in Kowloon, but extended with early reclamations along the coast and into any valleys. The New Territories (NT) and the outlying Islands, leased to the British in 1898, make up the largest part of the SAR area, but remained largely rural up until the 1950s, when new towns were grown around existing villages to house the exploding population after WW2. Today, NT has a peri-urban character interspersed with high rise and semi-high density new towns accessed by the mass transit rail system (MTR). The Islands remain largely rural due to their geography. It only took about 150 years for Hong Kong to take the shape it offers now: a high-rise city between water and verdant mountains located at the south-eastern extremity of the Pearl River Delta (PRD) on a chunk of the Chinese mainland and a dispersed territory of mountainous islands. ■

PAUL LEGROART/L'INSTITUT PARIS REGION

Should Hong Kong continue to expand on the sea or sacrifice its remaining agricultural areas? Kam Tin area.

arise out of the topography. It is also enabled by the fact that land sale premiums need to be ploughed back into capital projects. All of this still fits the market-led logic, since the MTR Corporation is a private entity, although about 75% owned by the SAR Government.

The second point concerns the physical shape of the network, which strongly reflects the historic development pattern, and is therefore over-centralised, reflecting also the concentration of Hong Kong's economic activities in the historical cores and corridors; decentralisation has only happened with residential use, and not commercial use; 76% of HK workplaces are located in urban core urban districts despite planning efforts. This has been reinforced with the shape of MTR network development; lines were laid out 'where people wanted to be and go' thus intensifying crowding in already busy places.

Lastly, at the strategic level, the Hong Kong 2030+, the HKSAR Government Planning Department's strategic planning document, must be read in the light of the Chinese Central Government's Greater Bay Area plan, which envisages Hong Kong being one of 11 Pearl River Delta (PRD) cities in an urban region with a population estimated at approximately 65 million and an area of around 55,000 square kilometres. Nevertheless, assuming that Hong Kong remains a self-governing and border-delimited SAR, the historical combination of scarce buildable land, a land management system which incentivizes development and the private sector-driven development model remain key shapers of the dominant strands in its planning discourse.

LEARNING FROM HONG KONG?

One might imagine from these very particular circumstances that make Hong Kong so unique that very few lessons can be taken away to cities which have less extreme topography and less eventful histories. Yet, the case of Hong Kong may be instructive and indeed, directly contributory in unexpected ways. Two throughts could be pertinent to the Greater Bay Area.

First, Chinese cities already have a land management model similar to Hong Kong's, with the municipal governments granting only time-limited leases, and being able, therefore, to raise funds from these sales. This system drives, rather than limits development, but few cities have the extreme natural topographical limits to development that Hong Kong has, nor its particular historical limits. A case in point is the constraints on development in Hong Kong that arise from the strict protection of its country parks and green belts. While this protection is being challenged in a recent Government document detailing possible strategies of increasing land supply, the fact that these parks exist and are relatively

The spatial concept of the Plan 2030+ focuses on: expanding and strengthening the existing business metropolitan core (CBD1) with the new CBD2 (see p. 178) and the East Lantau Metropolis (ELM) new island proposal; the Western and Northern Economic Belt (to the New Territories North Development (NTN)); the Eastern Knowledge and Technology Corridor and the transport corridors (in blue).
CREDITS : *PLANNING DEPARTMENT, THE GOVERNMENT OF THE HONG KONG SPECIAL ADMINISTRATIVE REGION*, EXPLANATION OF SYMBOLS PROVIDED BY L'INSTITUT PARIS REGION TO REPLACE THE ORIGINAL LEGEND OF THE DIAGRAM (https://www.hk2030plus.hk/conceptual.htm)

well-used means that the majority of this land will remain protected, ensuring a significant proportion of 'green cover'. PRD cities have planning policies that limit and direct urban growth, but what about strategic greening? A cursory review of the aerial images of the Pearl River Delta over the past 30 years shows its massive 'de-greening', with Hong Kong being a major green area in what has become a vast area of browns, greys and yellows. Counterintuitively, Hong Kong may already be becoming a regional destination for wilderness tourism.

Second, many cities have pursued the building of rail transit systems, which can work with a rail and property model to generate income for the municipality. In the Greater Bay Area, four of the remaining ten cities have metro systems, and some are extensive. For each of those systems, the lesson from Hong Kong is that the shape of the metro network matters to how well centrality is managed in the city. Despite this, and a rapidly growing network of motorways, cross PRD travel at present is difficult by public transport. While a few adjacent PRD metro systems are beginning to be linked, for example the Shenzhen Metro links with Hong Kong MTR and Dongguan Metro at opposite ends of its network, a metro system is not suitable for regional travel. To avoid the over-centralised distribution of accessibility suffered in the Hong Kong, some form of supplemental Bay Area-wide public transit system would be required.

IDEAS FOR HONG KONG

What about ideas for Hong Kong itself in the era of the Greater Bay Area?

In recent years, the rising un-affordability of housing in a culture where home ownership is a

form of security and status has intensified the search for more ways to 'supply land for development'. 'Land for Hong Kong: Our Home, Our Say! How to Tackle the Land Shortage', published in April 2018 by the Government's Task Force for Land Supply, for consultation, puts forward twelve possible new strategies for public consultation, including using underground caverns, further reclamation, village extensions and more new towns in the New Territories.

One premise for increasing 'land supply' in the first place is that density is negatively correlated with liveability. First put forward in the Hong Kong 2030+ document, the underlying analysis takes the liveability score of 200 cities from around the world as ranked by the Mercer index and compares it to density[1]. The Government is concerned with 'city rankings' because they see a liveable city as a necessary feature for attracting and retaining a highly mobile internationalised 'community' of expatriate workers, and thus their employers.

In the Greater Bay Area era, liveability may be even more important as Hong Kong competes, against the odds, with other PRD cities with more and cheaper space, and potentially much higher quality of life. There is nothing to suggest that given the correct conditions and rights of abode, Hong Kongers would not choose to live across the border; indeed, many already do.

We want to explore some ideas for Hong Kong to remain competitive, and we start by challenging the premise that a dense city will always be less liveable.

Like any generalisation involving places, this premise provides a misleading picture. We cannot say that higher density necessarily means lower liveability, as many other dimensions have also to be taken into account. Similarly, it is tempting to argue that richer cities are always more liveable, but the data shows that while liveability increases with GDP per capita up to a maximum, the highest liveability ranked cities have a lower GDP/capita ratio than the richest cities. Globally, only 'city size' seems to have a more or less consistent relationship with liveability: the bigger the city, the less liveable.

The point here is not simply a question of what more sophisticated explanation of liveability can be identified and controlled; there are plenty of factors that contribute, as we have seen. The point is that crude and undifferentiating concepts in policy-making should be avoided, however tempting a soundbite they seem to provide, when more incisive analysis can lead to technically superior decision-making.

If density is too crude, what other factors can urban planning actions influence to deal with the lack of development land?

There are very many over-crowded urban spaces and districts in Hong Kong, but there are also plenty of quiet spaces and less crowded ones too. There is a question of distribution of people and workplace over space which is clearly associated with public transport configuration. Then there is the notoriety of Hong Kong's housing situation, where 'homes' range from coffin homes – where the poor rent a half-height lockable and airless 'bunk bed' – and even the well-paid professionals can barely afford a 15-square-meter apartment, but where the rich have ample space to park large collections of luxury cars. It is a question of the distribution of the benefits of space.

WE CANNOT SAY THAT HIGHER DENSITY ALWAYS MEANS LOWER LIVEABILITY

When crossing a road, the very well-behaved crowd at the pedestrian crossing waiting for a green man, even when there is not a car in sight on the wide and straight carriageway, and when the pedestrian build-up completely obstructs the narrow footway. It is a question of the distribution of people over space and time and the allocation of space. All of this suggests a problem of distribution of Hong Kong's space to various users, not only in space, but in time. Consequently, 'supplying more land for development' is only part of the answer to dealing with Hong Kong's space utilization problems.

We suggest that there is a need to ask not just how Hong Kong can 'increase land supply', but

Very high real estate prices oblige Hong Kong's modest populations to live in very small apartments.

how Hong Kong can 'utilize its space' more efficiently and effectively.

USING SPACE MORE EFFICIENTLY

This recasting requires us to think about not just land use location but 'configuration shaping' – i.e. physical design, not just land use but 'programming' – i.e. activity design and not just 'statutory planning' and 'property development' but institutional design. One example of a planning approach is place-specific project-led development, in the manner of the French Zone d'Aménagement Concerté (ZAC) where market and governing mechanisms enable and coordinate these three types of design.

Such a re-framing would reflect the direction in which planning theory and practice around the world has moved in the last 20 or so years, which moves away from a technical model of numbers-driven 'development control' and towards 'development management' and more recently 'place-based planning', 'place making' and 'place management'. It could provide the agility and scope for responsive urban management in pursuit of a more liveable city.

If this paradigm shift is possible, Hong Kong may be able to take better control and fuller advantage of its unique space and place resources to compete on quality and not just quantity of space.

Can this happen in Hong Kong? Arrayed against this paradigm shift are the path-dependent design of existing institutions, and the forces of conservatism in the bureaucratic, political and business cultures. Yet if Hong Kong is to stay attractive and liveable, such a change must happen. For a city that has re-invented itself several times and that has been part of the rich world, its urban planning and built environment quality management arrangements do not reflect the evolving needs and aspirations of its citizens. A quality place is no longer a fancy extra, it is an effective component for maintaining Hong Kong's much-prized competitiveness. ■

FURTHER READING

HONG KONG 2030+
TOWARDS A PLANNING VISION AND STRATEGY
OCTOBER 2016

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LATIN AMERICAN CITIES ARE INVENTING NEW MOBILITY SOLUTIONS

The energy transition in Latin America's metropolitan areas is threatened by the current explosion in the number of private vehicles. As these cities are now looking for innovative solutions to boost their mass transit system, it seems that technology is not enough. A new urban vision that is integrated and shared by everybody is needed.

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Andrés Borthagaray, Architect and Urbanist, Director of the City on the Move VEDECOM Institute and **Thomas Massin**, Urbanist, Researcher at CEUR-CONICET (Buenos Aires)

TransMilenio in Bogotá, effective but insufficient for a megacity of 10.5 million inhabitants.
PHOTO: SCOTT DALTON/THE NEW YORK TIMES-REDUX-REA

While the population of the Latin American area has increased by 10% since 2010, the number of cars has risen by 40% and the number of motorbikes by 200%, according to a study carried out by *Corporación Andina de Fomento* in 2018. This growth can be interpreted as a logical response on the part of underprivileged and working class people to inadequate public transport, where private vehicles are seen as the only "efficient" way of getting from A to B. Latin American cities are at risk of losing one of their comparative advantages with regard to energy transition, namely a level of dependency on motorised transport that is lower than that observed in more developed regions of the world. This transition should be driven forward by inventing solutions that improve the allocation and effectiveness of public resources earmarked for urban mobility and infrastructures.

As regards large-scale public transport solutions, ambitious developments have been undertaken in several large Latin American cities in the last decades. They have been accompanied by a new kind of promotional discourse, and sometimes by new metropolitan governance bodies such as the Ente de Coordinación Metropolitana in Rosario and the Área Metropolitana del Valle de Aburrá in Medellín. But in general, most larger cities have been slow to develop their metro networks (Mexico City, São Paulo and Santiago), or have failed to keep up the levels of investment made several decades ago, for example in Buenos Aires where the 800-kilometre train network is the same as it was at the beginning of the twentieth century. With over 8 million inhabitants Bogotá is the largest city in the world without a metro (it is planned for 2024).

CHEAPER AND CREATIVE SOLUTIONS

In this context, cheaper and more imaginative solutions in terms of infrastructure have been developed. Two well-known examples are the Bus Rapid Transit (BRT) and the Metrocable. Over 40 years after its first version in Curitiba[1], the BRT has been copied in many cities in Latin America and beyond (Istanbul, Johannesburg, Lagos, etc.). The World Bank played an important role in its support, at times without really taking into account the urban context. Bogotá has devoted all its efforts to building the BRT Transmilenio network. The overall outcome has been positive, with individual differences in terms of passenger numbers or the way public space is organised. The Metrocable in Medellín, an emblematic symbol of public transport by cable car, has also spawned versions elsewhere, funded in particular by international bodies. Versions of the system have been built in Rio, La Paz and Caracas, and there is one at the planning stage in Quito.

INNOVATIVE AND LOW-COST INFRASTRUCTURE SOLUTIONS ARE EXPERIMENTED

But we must not forget the structural problems faced by metropolitan mass transit systems, which inevitably require massive long-term investments that are still all too often allocated to road-building projects such as the Paseo del Bajo motorway in Buenos Aires or the Anillo Periférico in Mexico City.

NEW APPROACHES FOR TRANSITION

Beyond these examples, new approaches to sustainable transition that addresses the mobility needs of the most underprivileged populations and fosters compact urban development will require a both sustainable and integrated vision, rather than technological illusions.

The first of these approaches concerns governance, from the decision-making process to the technical, economic and environmental evaluation of transport initiatives. Huge corruption scandals involving conglomerates (Petrobras and Odebrecht, among others) and politicians clearly remind us of the need to improve the resistance of decision-making systems to pressure from large public construction groups. Also they show that the democratic selection processes for transport projects put too much emphasis on technological aspects. Climate

PAUL LECROART/L'INSTITUT PARIS REGION

ALEJANDRO GARCÍA

MOSKOW/GETTY IMAGES

ALBAN GARCIA

In order to supersede the car-oriented development model, Latin American cities are looking for innovative solutions. In an attempt to absorb urban barriers, as in Cali (top), footbridges are spreading in some cities such as Buenos Aires (bottom). Structural investments are made, for exemple, in rail networks in Buenos Aires or in cable cars in Rio.

©FITOPARDO.COM/GETTY IMAGES

As in Mexico City with the Paseo de la Reforma, most major Latin American cities convert their main streets into pedestrian and bicycle thorough fares on Sundays, as a foretaste of more permanent transformation.

change and air quality are struggling to emerge in political discourse and decision-making, and are often not even mentioned in environmental assessments, despite the fact that all the Latin American countries have ratified the Paris Climate Agreement. Public meetings and consultations do exist, but they are all too often mere formalities, sometimes because budget documents and technical evaluations are difficult to read and understand.

The second approach to be explored concerns the need to take into account the mobility environment. In urban projects, this means taking pedestrians and cyclists into consideration and resisting the existence of barriers. For example, Avenida Jiménez in Bogotá has been developed very successfully in this regard, whereas on Avenida Caracas the functionality of the transport system predominates. This also involves improving passenger information and catering to the needs of vulnerable groups, which are increasingly mobilising to defend their rights. Dynamic organisations such as the Fundación Colombiana de Peatones and the Liga Peatonal in Mexico, or academic initiatives such as the work of Juan Carlos Dextre in Lima are also helping to raise awareness of these issues. Last but not least, the possibility of achieving energy transition for buses and of raising awareness of the social cost of fossil fuel emissions opens a window of opportunity for major change. Without being condescending, we can say that the existence of large-scale spontaneous or informal systems lends itself to technological innovations (platforms and big data for vehicle-sharing solutions, including taxis) that can complement the "heavier" transport networks. Despite the existence of niche innovations, it still seems unrealistic to expect a miracle solution in the form of autonomous vehicles due to their high cost, the fact that they have to share the road with very old vehicles, and the widespread flouting of traffic regulations.

This means that the transition towards sustainable Latin American cities has to be achieved by mobilising intelligence, innovation appropriate to each different area, and democratic governance, rather than by adopting turnkey tech-based solutions. In this way, they would represent a model likely to inspire many large cities around the world.■

1. Capital of the state of Paraná in southern Brazil.

GAUTENG: AN AFRICAN CITY-REGION UNDER PRESSURE

From the fall of Apartheid to the current uncertain political times, the Gauteng City-Region has experienced a socially and physically fragmented pattern of spatial development, driven by economic growth and inward migration. Is the current planning system just running after market forces and societal needs, as in many African cities? Or does it make it possible to steer development by efficiently bringing together different key players around strategic projects?

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Alan Mabin, Emeritus Professor
University of the Witwatersrand,
and **Rashid Seedat**, Head of Planning Division,
Gauteng Provincial Government
in Johannesburg

CLIVE HASSALL

Centred on Johannesburg and Pretoria, which are the financial and government centres of the country, and with a population of close to 15 million people, the South African province of Gauteng is highly urbanized, with a small rural hinterland. The key turning point of the formal end of apartheid and first democratic elections in 1994 constituted a base line from which we can consider the transformation of the city region. From that time to the present there has been a population increase of at least 100% within the region and the built area has increased by well over 50%.

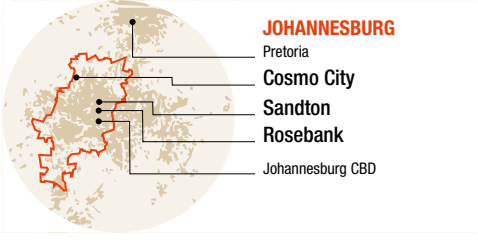
FROM VISION TO REALITY: WHEN HANDS ARE TIED

A generation ago, the prospect of victory in the struggle against apartheid inspired desired forms of spatial change, including densification,

Between Johannesburg and Pretoria: Riverbend district in Randburg.

compactness, less sprawl, and clearer development of nodes and lines of mobility, as well as the reduction of the high levels of social and racial segregation. '*While proactive state policies have had some impact (not necessarily in the direction of desired spatial transformation), and there are complex interrelationships, empirical studies suggest that the major weight of evidence is towards the roles of private enterprise and people in shaping spatial change, enabled in part by forms of state loosening*'[1].

But today, "*fractured forms of development continue*"[2] and so does urban sprawl. The former segregated black 'townships' and the expanding suburban-type zones are the most evident examples. The sprawl is especially strong along the ribbons -particularly those linking Pretoria and Johannesburg and their environs up to



60 km to the south. Publicly driven delivery of housing is part of the picture, as well as many more clusters, estates, and walled gated developments. To the north and northwest of Gauteng, and over its provincial boundaries, the displaced urbanization patterns of the past still continue today. Yet, the growth of population is faster than the growth of the built area, so consolidation and densification are also taking place. From 2001-

2011, overall densities rose from 3700 in built up areas to close to 5000 per km².

POPULATION CHANGE CORRELATES WITH THE DISTRIBUTION OF SERVICES AND ECONOMIC GROWTH

The population of Gauteng continues to grow. With around 14.7 million people living in the province today, it cements its position within the country with approximately 25% of South Africa's population. Mid-year population estimates in 2018 highlight an ongoing trend that Gauteng is a recipient of migrants with the largest inflow of migrants from other provinces as well as other African countries of just over 1 million people from 2016. The increased population places an added burden on already overextended basic services but the recently launched Quality of Life Survey (QoL) indicates that the level of access to services remains stable[3]. The QoL Survey further indicates that while delivery improves in some municipalities, other municipalities suffer from a service delivery collapse which in turn decreases satisfaction levels in local governments.

Gauteng continues to focus on transforming the local economy to address the triple threat of unemployment, inequality, and poverty. Despite the gloomy economic outlook, Gauteng's economy contributes 35% of the South African Gross Domestic Product (GDP). Economic growth in Gauteng is driven by high level services, such as finance and business services, trade and government services. However, in 2017, overall unemployment in Gauteng was around 33%.

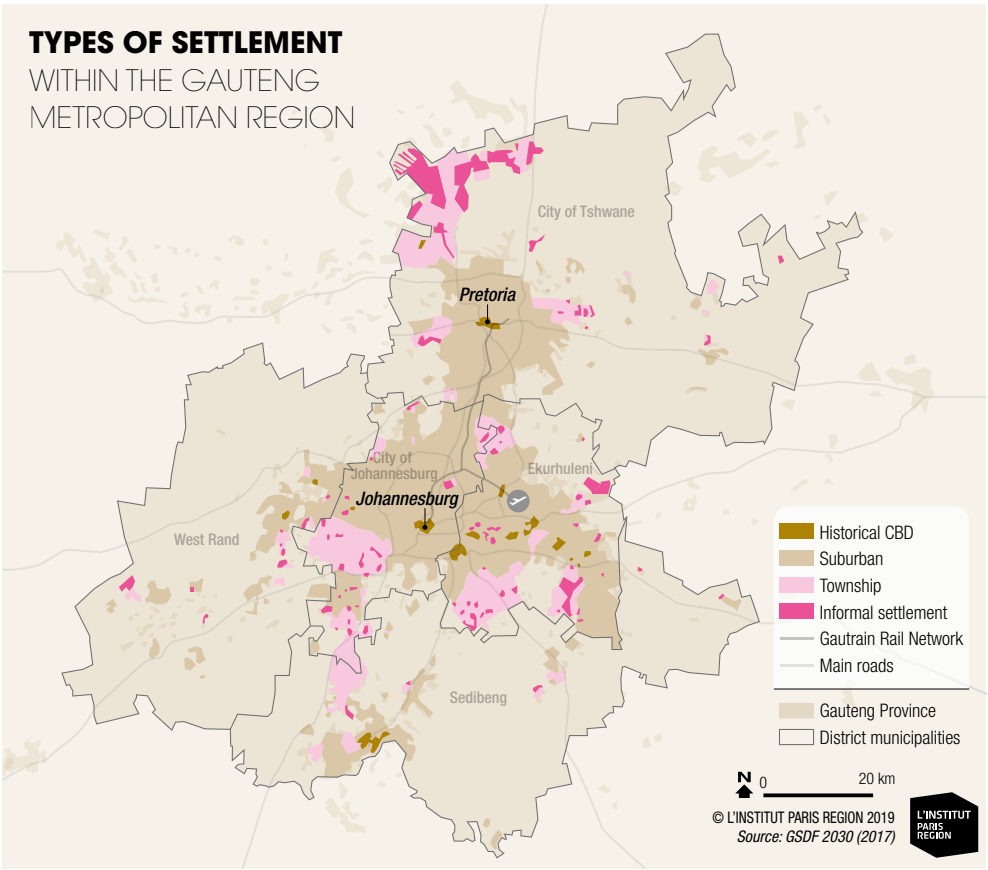
HOW DO YOU PLAN A SPRAWLING AFRICAN CITY-REGION?

Gauteng's recent history demonstrates that the transformation of spatial organization remains a massive challenge. The conditions of rapid urban growth, due in large part to in-migration, restrict the mobilization of adequate resources, meaning that few ideas for reshaping the urban environment are implemented, or even tested. Nonetheless, a prospect of more substantial economic growth, especially employment growth, could clear the way toward the development of more sustainable and equitable urban forms, along with the instruments and social consensus to do so. This may contribute to reshaping this city region more substantially over the next 30 years to the midpoint of the century.

Published by the Provincial Government of Gauteng, the Gauteng Spatial Development Framework 2030 ('Gauteng 2030'), completed in 2017, '*seeks to (i) direct, guide, focus and (ii) align, coordinate and harmonise all development spending in the province, to ensure rapid, sustainable and inclusive provincial economic growth and township redevelopment, therefore enabling decisive spatial transformation*'. After the relatively poor implementation of the first version of the framework from 2011, which had only resulted in a slow spatial, economic and social transformation, the provincial Government decided to reinforce its potential. Aspirations were backed by the Spatial Planning and land Use Management Act (SPLUMA), implemented in 2015. This act regulated the compilation among the different Spatial Development Frameworks of each level of governance: from national, provincial, regional to municipal. It demanded a reviewing process for the documents in order to assure their consistency.

Gauteng 2030 seeks to knit the city-region into a coherent, functional entity by densification of the inner urban core (Johannesburg-Pretoria-Ekurhuleni corridor); recognising and reinforcing the polycentric structure, especially secondary urban centres; articulation with the rural hinterland; and preserving the green belt surrounding the urban core. Difficulties include competing or contradictory ambitions: in part within the diverse responsibilities of provincial government; between the metropolitan municipalities and provincial plans; and orientations of private developers and public authorities. It is too early to assess implementation of Gauteng 2030, yet it is possible to point to some inspirational projects which may be of interest in other city-regions.

Where different agencies with distinct powers and functions have worked jointly or at least in complementary ways, there are signs of significant change. A major example can be found



in areas around some of the new, underground Gautrain railway stations opened in 2010/11. The two most obvious are Sandton and Rosebank in Johannesburg, where provincial planning of the railway, municipal relaxation of land use restrictions and investment in new bulk services, along with positive conversations between private developers and public agencies are resulting in rapid densification around the stations. This includes office, commercial as well as residential space, with at least some of the latter being within the affordability if not of the poor, certainly of many ranks of workers in such spaces.

Another example of successful collaboration between authorities can be found at Cosmo City in the north-western part of Johannesburg. Conceived as a mixed income development, the project includes subsidised housing for lower income residents as well as other developments for rental and home ownership. Again, private and public sector collaboration with involvement of the City of Johannesburg, provincial government, and the national Department of Human Settlements has made possible a type of development which did not exist in the past. With around 70,000 new homes, Cosmo City is answering the massive housing need of the city-region and can be seen as a new kind of relatively integrated urban development. It remains to be seen whether such planning and development interaction guided by Gauteng 2030 will continue and strengthen over the next decade. ■

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Harrison Philip and Todes Alison (2015), Geoforum, 61, pp. 148–162.

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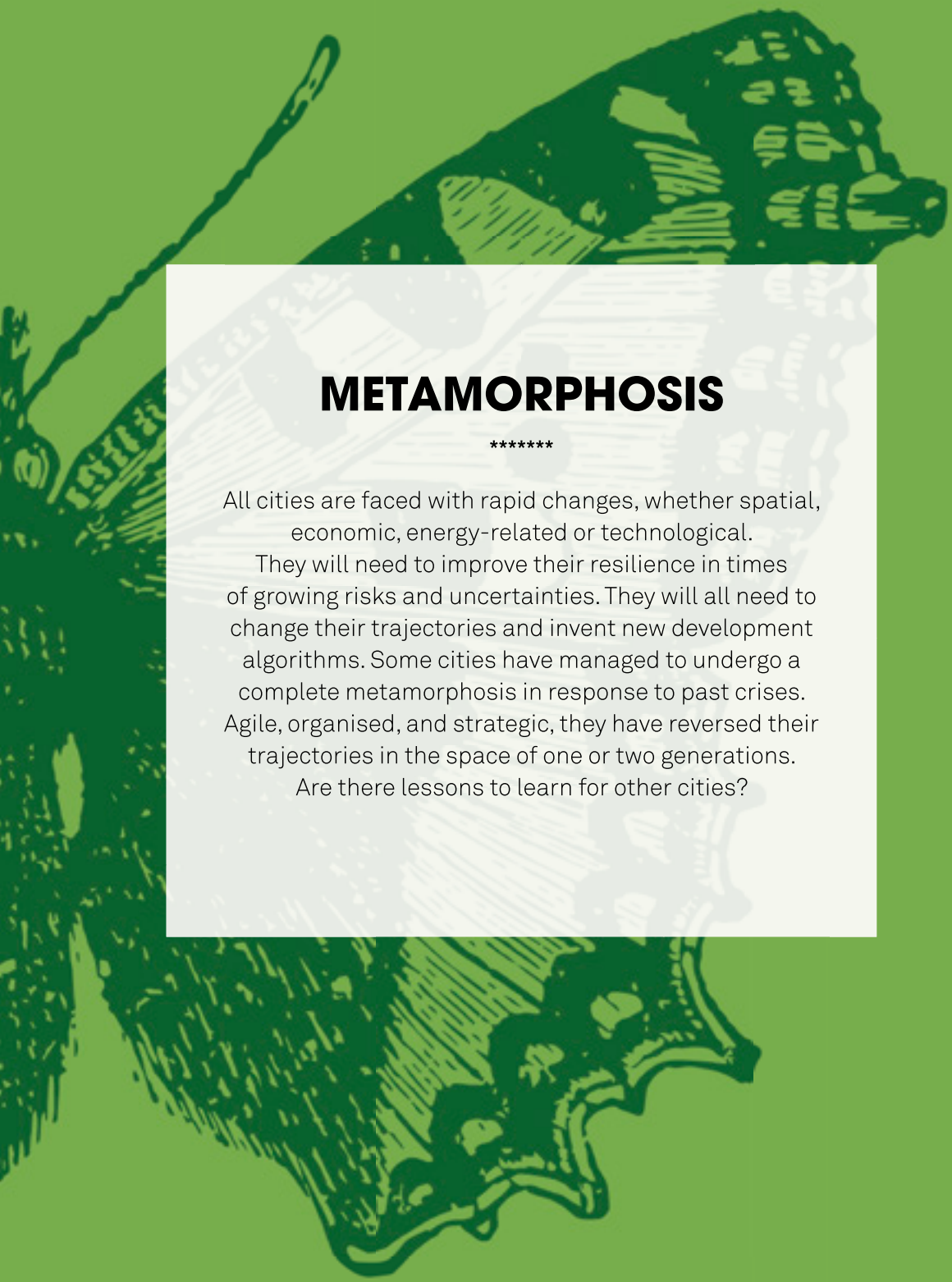
Harrison Philip *et al.* (2014), Johannesburg: Wits University Press.

1. Harrison and Todes (2015).
2. Gotz, Graeme, Chris Wray and Brian Mubiwa, *The 'thin oil of urbanisation'? Spatial change in Johannesburg and the Gauteng city-region,* in: Philip Harrison *et al.* (2014).
3. https://www.gcro.ac.za/research/project/detail/quality-of-life-survey-v-201718/

PATRICK GUENETTE/ALAMY STOCK VECTOR



METAMORPHOSIS

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All cities are faced with rapid changes, whether spatial, economic, energy-related or technological. They will need to improve their resilience in times of growing risks and uncertainties. They will all need to change their trajectories and invent new development algorithms. Some cities have managed to undergo a complete metamorphosis in response to past crises. Agile, organised, and strategic, they have reversed their trajectories in the space of one or two generations. Are there lessons to learn for other cities?

The metamorphosis of the Chicago River.
BRUCE LEIGHTY/GETTY IMAGES

HOW DO CITIES CHANGE THEIR **TRAJECTORIES**?

Cities emerge, flourish, shrink, and undergo transformations. They die, and are sometimes reborn. Some undergo complete metamorphosis: Singapore, The Ruhr, Copenhagen and Medellín have coped with social or economic crises by changing their development patterns. Others have developed innovative strategies of resilience. All will have to negotiate profound changes to deal with the ecological and social challenges of the next century. But how?

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Paul Lecroart, Senior Urbanist, L'Institut Paris Region

Over recent decades, poverty has decreased globally thanks to economic growth made possible by the increased extraction of fossil energy and natural resources. But this reduction goes hand in hand with a worsening of social and economic disparities on all scales. Anthropic in origin, global warming is accelerating. It is highly likely to lead to a temperature increase of at least 1.5 °C, or even 2 °C, between 2030 and 2050 compared to pre-industrial levels, with irreversible impacts on ecosystems. Global biodiversity is declining at an ever-increasing rate.

Large cities will be in the forefront to cope with acute crises in a variety of forms: risks of flooding and hurricanes, sanitary and migratory crises, network vulnerability, social and economic impacts occurring in sequence, etc. Some are preparing for this with eco-planning, mitigation, climate change adaptation and resilience strategies.

Ecological, economic and political crises are not a new phenomenon, but in future they will be more global and systemic. At the dawn of the 2nd century CE, Leptis Magna was one of the most opulent cities in the Roman world, but its harbour was gradually being choked with silt, partly due to deforestation. A decision was made to enlarge the harbour seawards: this only served to speed up the silting process, which accelerated the city's economic decline. It would suffer earthquakes, a tsunami and invasions before finally being abandoned to the desert sand. Ephesus and other cities met a similar fate.

To survive in the future, cities and regions will have to adapt as soon as possible, with the support of states and international institutions. This will involve the co-construction of positive trajectories leading towards a desirable and possible future for us all. Local authorities will have to carefully anticipate the stages of this process, clarifying possible options and their consequences. They will have to be able to negotiate agreements with economic stakeholders, companies, intermediate organisations, neighbouring territories, and citizens' associations: everyone will have to forego certain advantages so that something can be gained in terms of economic or cultural opportunities, quality of life and wellbeing.

- How can a long-term trajectory of change be constructed?
- How can support be found to finance structural choices that contribute to change?
- How can ecological, social and planning innovations be implemented on a large scale?
- How can we capitalise on progress that has been made to win over public opinion and move further forward?

MOVING AWAY FROM UNEQUAL, CARBON-FRIENDLY, MODELS REQUIRES LONG-TERM STRATEGIES AND A GREAT DEAL OF POLITICAL WILL

To attempt to answer these questions, what better than to look back over the experiences of cities and metropolitan regions that have profoundly changed in the space of one or two generations? Who would have thought in 1989 that the Ruhr Valley, all but ruined by the collapse of the steel industry, would turn into a greener, more attractive region thanks to innovative ecological and cultural conversion programmes (read the article by Michael

Metamorphosis

A process in which someone or something changes completely into something different.

(Oxford Advanced Learners Dictionary)

Resilience

The capacity to recover quickly from difficulties; the ability of a substance or object to spring back into shape.

(Oxford Advanced Learners Dictionary)

***Wei ji* (Mandarin)**

Crisis. From wei "danger" and ji "tipping point" or "decisive moment". ■

(Translated from Larousse French-Mandarin Dictionary, 2018)

Schwarze-Rodrian, p. 74)? Malmö experienced a profound economic and social crisis in the early 1990s, and transformed into a European capital of sustainable planning that is economically dynamic though still socially fragile. The insolent prosperity of neighbouring Copenhagen, one of the world leaders of "green growth", makes us forget that it managed to cope with the profound crisis of the 1990s thanks to a strategic alliance with the Danish state (article by Paul Lecroart, p. 78). It is enlightening to compare New York with Copenhagen: also bankrupt in the 1980s, New York has made a spectacular recovery since 2001 but without the necessary structural changes, making it lag further behind in terms of ecological and energy transition.

The case of Medellín is remarkable. Beset with problems of violence and drug trafficking in the 1990s, thirty years later, in 2012, it was dubbed *Most Innovative City of the Year* by the Wall Street Journal. During these thirty years, five strategically-minded mayors have been able to develop high-leverage projects to generate a new dynamic on a metropolitan scale (article by Luis Fernando Gonzalez and interview with Ximena Covaleda, p. 90). In Seoul, change began in the mid 2000s, when the city turned its back on the productivist urban development of the 1970s, adopting instead a model that places city-dwellers and the environment at the centre of its strategy (article by Hee-Seok Kim, p. 81). Singapore has its own special story to tell: a young island city-state, poor and lacking resources in the 1960s, it has transformed into a prosperous fossil-fuel driven metropolis that is seeking a more sustainable environmental trajectory (see Paul Lecroart's article, p. 96).

MAXIMILIAN GAWLIK/L'INSTITUT PARIS REGION

Changing models: challenges and methods. Park in Medellín.

Sometimes perceived as ungovernable because of the inertia and complexity of the economic, financial and political systems under which they operate, some cities have shown themselves to be amazingly malleable and permeable to change. When they suffer a serious crisis, or when they perceive the risks of slow decline, they find the necessary resources to change their trajectory and reinvent themselves by focusing on new development models. The size of cities, their maturity, their rate of growth, their institutional organisation, the engagement of the business community and of citizens, the social and cultural cohesion of metropolitan regions...all these factors influence the implementation of change strategies. But in all cases, the strategic vision, the ability to seize opportunities and the leadership of mayors, governors or state representatives, play a crucial role[1]. ■

1. *Large Scale Urban Development Projects: Drivers of Change in City-Regions.* Les Cahiers de l'IAU n°146, June 2007.

CHANGING COURSE: LONG-TERM **RUHR** EXPERIENCES

Within a generation the Ruhr has gone through radical change. It has moved from a coal- and steel-based declining industrial region to a greener service and knowledge-oriented polycentric metropolis.
This has had a profound impact on society and landscape.
This story is about how a group of independent cities addresses structural transformation with a new vision, creative approaches and tailor-made cooperation instruments. Many lessons are here to be learnt.

****

Michael Schwarze-Rodrian, Head of Division: European and regional Networks Ruhr Regionalverband Ruhr (RVR)

MARTIN KIRCHNER/LAIF-REA

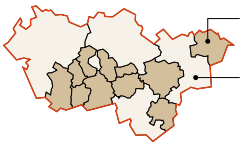
By 1985, the decline of old industries within the Ruhr region left behind 5,000 hectares of often-contaminated brownfield land. A new thinking was needed to imagine the future and find sustainable solutions for these extensive areas of post-industrial urban landscape.
In the late 1980s, a new vision emerged to consider the structural change in the economy and society as a unique opportunity to deliver new sustainable urban and regional development. This approach sounds very familiar to us today, but it was completely unknown at the end of the 1980s. It answered both growing concern over the environment and an interest in preserving local heritage.

Street Food festival in the Duisburg North Landscape Park.

THE INTERNATIONAL BUILDING EXHIBITION (IBA 1999) EMSCHER PARK CATALYST

The strategy to revitalize the weaker parts of the Ruhr region is epitomized by the International Building Exhibition (IBA) at Emscher Park that was implemented between 1989 and 1999, under the leadership of its inspiring director Karl Ganser. Sub-titled "Workshop for the Future of Old Industrial Regions", this tailor-made, large-scale experiment of creative discussion, networking and the stimulation of new solutions became the blueprint for the development of the whole region. IBA projects became best practice projects in the Ruhr region itself. In other words, what had been done during IBA could be replicated later to other

THE RUHR METROPOLITAN REGION COMPRISES…



11 independent cities
(kreisfreie Städte)

4 counties
(Kreise)

53 local authorities

5.1 million people

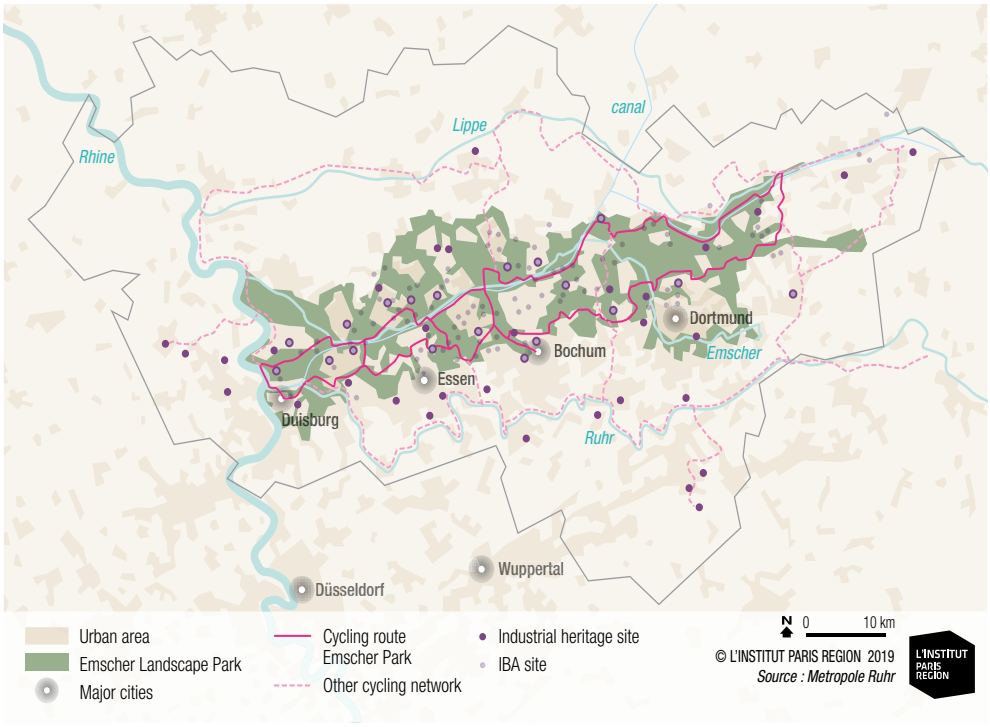
REGENERATION STRATEGIES AND INSTRUMENTS

The success of the IBA has led to the establishment of many region-wide or tailor-made regeneration strategies and network activities, experimenting with different formats.

- **Ruhrtriennale. Annual high-end performing arts festival (since 2002) in the cathedrals of industrial heritage converted during IBA 1999,**
- **CitiesRegion Ruhr 2030. The voluntary network of all planning administrations of the 11 big cities and the 4 counties in the region,**
- **Concept Ruhr and Chance of Change. 41 cities and 4 counties supporting integrated development solutions, including the transformation of the last coal mines,**
- **RUHR.2010. The regional performance of European Capital of Culture 2010,**
- **InnovationCity Ruhr. A 10-year 50% reduction of greenhouse gas emissions,**
- **RuhrKunstMuseen. The network of 20 art museums in the region,**
- **KlimaExpo.2022. A showroom for best practice climate solutions,**
- **Green Infrastructure Ruhr. Integrating 5 fields of sustainability: cultural urban landscape, water in the city, green urbanism, low-emission bike mobility, climate protection and energy efficiency,**
- **International Garden Exhibition Ruhr 2027 (IGA 2027). Three future gardens on former industrial sites.**

The relevance of these initiatives relies on key and recurring elements such as vision, openness to innovations, competitions for best ideas, design and solutions, leadership, networks, moderation, transparency, cooperation, fairness and partnership. The Ruhr cities and the region have learned to serve and to care for these key principles. ■

THE RUHR: **METROPOLITAN AND CULTURAL LANDSCAPE PARK**



sites. The impulse of IBA was sustainable, widespread, and continues today.

Today, the sky over the Ruhr region is blue again, a campaign promise made in 1961 by former chancellor candidate Willy Brandt that was seen as highly unlikely at the time. Over the years, air pollution has greatly diminished and contaminated soils have been mapped, cleaned or encapsulated. Brownfield sites are now being re-used by new and cleaner businesses, and some have been converted into social and cultural facilities, historic landmarks or parks.

The urban landscape has become greener and connected as symbolized by the internationally famous Emscher Landscape Park. Twenty cities and the Regional Association Ruhr (RVR) are planning, designing, investing and developing new urban landscapes in an area of 457 km². Unique parks on converted industrial sites have become landmarks for new thinking. Landscape Park Duisburg North, Ripshorst Treegarden in Oberhausen, Zollverein Park in Essen, Inner Harbor in Duisburg, WestPark in Bochum, Phoenix in Dortmund, Nordstern Park in Gelsenkirchen, and the Tetrahedron in Bottrop on a former slag heap, are some examples of more than 100 projects that have materialized one by one since 1990.

Abandoned railroad tracks have been converted into a connected network of bicycle trails of several hundred kilometers. The water of the Emscher river is becoming clear again after one hundred years of misuse as an open sewer. It will be fully restored by the Emschergenossenschaft as a liveable river system by 2022 at a total cost of € 5.3 billion.

THE RUHR, A 40-YEAR LABORATORY OF CHANGE

The Ruhr has been a laboratory of change for over 40 years, its transformation forming an important topic for regional and federal politics since the 1960s. The transition from old industry to a modern, knowledge-based metropolitan region has followed different strategies and steps. It has included massive investments in universities, new technologies, training programs, and urban renewal initiatives. The change has been continuously supported by public subsidies and funds from the state of North Rhine-Westphalia, the Federal Republic

MICHAEL SCHWARZE-RODRIAN

Change in the Region is based on the collective work of local elected officials. Here, mayors discuss the layout of a bicycle path.

of Germany and the EU, as city budgets were too small for these challenges. Several tailor-made public instruments, state programs, initiatives and political strategies have been discussed, developed, tested and implemented in the Ruhr region.

One practical lesson learned was about the necessary time to redevelop sites: it takes thirty years to make old industrial sites and neighborhoods into liveable and attractive places.

A COMPLEX AND OPEN PROCESS BASED ON A POLITICAL CONSENSUS

The transformation of the whole region is still on its way. It is a complex and open process incorporating all sectors of society, economy, culture, environment and daily life. It is directly linked to dynamic changes in Germany, in Europe and on the world market. The transformation of the Ruhr region is a success story because it is based on regional realities and local conditions, the skills of people and the potentials of companies, the partnership of cities and willingness to learn, to join and to design change.

Strategic cooperation between cities has been a key element in the successful regeneration of the region. The model and political consensus over the years can be characterized as a "soft landing".

However, regeneration has not been a homogenous process. There are winners and losers. Not everyone has been able to change, get a new qualification or a new job. Long-term unemployment remains mainly concentrated in poor neighborhoods and needs new answers.

As Germany's last coal mines were closed in December 2018, the redevelopment of the Ruhr region does not mean saying goodbye to the past. Rather, over the past thirty years, industrial heritage has transformed into cultural roots and become the basis for new development. Today, former factories, steelworks, coalmines, slag heaps and heavy industry train tracks are anchor points on the Industrial Heritage Route (RIK) stretching 400 km and attracting 7.3 million visitors in 2017. RIK became the lead project of ERIH – the network of European Routes of Industrial Heritage.

The Ruhr people are proud of what they have achieved, as is shown in the new international media campaign launched in 2017: "City of Cities – Metropolis Ruhr". Still, the people and the cities stay humble and sometimes, even feel uncertain about their prospects... ■

In Copenhagen, the Ørsted power plant now runs on natural gas instead of coal.
PHOTO: PAUL LECROART/L'INSTITUT PARIS REGION

COPENHAGEN-MALMÖ: FROM CRISIS TO SUSTAINABLE GROWTH?

In the 1990s, the two cities standing on opposite sides of the Øresund, the strait separating Denmark from Sweden, were in crisis: Copenhagen was bankrupt, while Malmö's industrial base was collapsing. 25 years later they have turned things around, reinventing themselves around quality-oriented planning and the green economy supported by flexible trans-border cooperations. How successful have they been? What lessons can be learned from their interconnected trajectories?

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Paul Lecroart, Senior Urbanist, L'Institut Paris Region

In the 1980s and 1990s, Copenhagen was facing social and economic decline: unemployment was soaring, and its housing stock and population were aging. Young families and companies were leaving the capital for the suburbs, reducing its financial capacity.

In 1989, the fall of the Berlin Wall opened the country up to the Baltic, providing the city with an initial boost. The report entitled "Our Capital. What will we do with it?" (*Hoved Stade, Hvad vil vi med den?*) proposed a City/State agreement on a policy of large-scale projects that were approved between 1991 and 1993: a physical connection between Denmark and Sweden (Malmö), an extension to the airport, and a new metro funded by selling developable land in Ørestad, a major urban development project covering 310 hectares between the centre and the airport. To improve its position on the European stage, Copenhagen united with Malmö as part of the Øresund Committee including their regions.

COPENHAGEN MAY NOT ACHIEVE ITS "ZERO CARBON" GOAL IN 2025, BUT IS LEARNING A LOT IN THE PROCESS

From 2007 onwards, with new resources in hand, Copenhagen responded to criticism that its City renaissance model was too focused on international investment by formulating a more quality-oriented form of urbanism: reclaiming public space (Amager beach, Superkilen square), regenerating underprivileged districts (Norrebrø) and transforming the harbour (Sydhavn, Nordhavn). The harbour development agency then merged with that of Ørestad to form *By & Havn* (City and Harbour), a joint municipal and state company with private status whose mission is to develop land belonging to the two entities. In public projects, emphasis is put on the design of urban space and mixed use, but 75% of the housing remains affordable only to better-off households.

The City and the State cooperate on renewable energy strategies and on producing heat from waste materials, with a view to becoming European leader in terms of the green economy. Voted Green Capital of Europe in 2014, Copenhagen reduced its emissions by 20% compared to 2005. In 2015 it announced its (unachievable) aim of being zero-carbon by 2025: behind the marketing lies considerable political determination.

Copenhagen has undergone a spectacular rebirth since 1990, reconciling economic attractiveness, population growth, and a quality urban environment, supported by a top-notch transport system principally based on trains, the metro and bikes. According to a survey[1], the added value per inhabitant produced in the capital region increased by 25% between 1990 and 2010. Citywide greenhouse gas emissions are said to have fallen by 40%.

But not everything is rosy in the state of Denmark. The closure of the Capital Region Council in 2007 and the recentralisation of regional planning[2] weakened the horizontal coordination of urban policies between the 34 municipalities of the Greater Copenhagen area. Raising the funds required to build the metro has led to excessive urban density in the heart of the city, and the involvement of the private sector in urban development has helped to aggravate social segregation across the capital region. A split has appeared between a dense, increasingly exclusive pedestrian- and bike-friendly centre, and suburban dormitory towns inhabited by middle-class families with children and cars. The impact of housing 200,000 new inhabitants in Greater Copenhagen by 2030 has sparked much debate, for example on the need for a new motorway bypass and plans to extend the city seawards.

MALMÖ REGENERATED

On the other side of the Øresund, Sweden's third largest city lost almost 30,000 jobs in industry between 1990 and 1993. In 1995, with its back to the wall, Malmö engaged in the *Vision Malmö 2015* plan, which laid the foundations for a holistic conversion strategy leveraging the Malmö-Copenhagen bridge project. It planned to transform the working-class city into a "city of knowledge" and a "sustainable city", an aspiration based on a new university and the conversion of the West Harbour (Västra Hamnen, 140 hectares) into

a laboratory of urban and ecological innovation. Creating transverse synergies between city council departments, major urban utilities and private developers resulted in the creation of a new district that is almost 100% energy self-sufficient and was presented to the public at the BO01 international exhibition – a financial failure, but a symbolic success that put Malmö on the map of "sustainable cities" and boosted its self-confidence. On these foundations, the city launched a high-quality regeneration strategy for the harbour and large areas of social housing (Augustenborg, Rosengård) based on principles of ecological, economic and social sustainability. As in Copenhagen, the planning schemes are tied closely to transport projects (rail-tunnel, central station, bike lane network).

In 2009, Malmö approved an ambitious programme whose aim was to make it into "the world's most sustainable city in 2020", one of its goals being 100 % renewable energy consumption. This goal will not be achieved, but Malmö has successfully completed the first phase of its post-industrial transition by becoming an innovative city of services and a leader in the fields of eco-industry and green roofs. Employment figures rose by 34% between 1995 and 2012, the population by 20 %, and 100,000 new residents are expected by 2040.

But social disparities are widening, due to the cost of housing and problems of integration faced by new arrivals, especially refugees. In response to riots in 2010, Malmö set up an independent commission tasked with drafting a sustainable social development strategy. Approved in 2013, *Malmö's Path Towards a Sustainable Future* set out 72 concrete initiatives designed to improve health, welfare and justice in the city. This innovative approach might serve as an inspiration for many other cities.

COPENHAGEN + MALMÖ = FLEXIBLE COOPERATION

The bridge and tunnel that opened in 1999 put Malmö half an hour from Copenhagen, revolutionising the relationship between the two cities by reinforcing their interdependency and their strategic position. They now cooperate in configurations that vary according to the subjects at hand. Since 2001, the ports of Copenhagen and Malmö have been run by a single operating body. The mayors meet every month to move forward on shared projects such as the Øresund metro. In 2016, the Øresund Committee was replaced by the Greater Copenhagen Committee (4.5 million inhabitants, 85 municipalities, 3 regions), which fosters flexible economic cooperation, with particular focus on the theme of "green growth".

LEARNING FROM GREATER COPENHAGEN

In the space of one generation, Copenhagen and Malmö have transformed to become global references in terms of quality of life, ecological urbanism and so-called "green growth" . This dynamic has been driven by several factors, including the leadership of visionary mayors and ministers; a culture of consensus that sets aside ideological differences to consolidate higher interests through regional alliances; a culture of dialogue that mobilises public services, the private sector, and residents around common objectives; an ability to identify drivers of change and to innovate in terms of method and design; public control of the instruments of regeneration (land, planning, human resources, water, waste and energy utilities, etc.); and last but not least, a culture that is mindful of nature and the common good.

Only time will tell if the "models" of integrated urban regeneration in these two cities will be resilient as they move forward, particularly in environmental and social terms. ■

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1. Copenhagen Green Economy Leader Report, *London School of Economics, 2014.*
2. *Cf. article on the Finger Plan, pp. 109 of this* Cahiers n° 176.
3. *Cf.* Les Cahiers de l'laurif *n° 146. Large-Scale Development Projects in Europe. Drivers of change in City-Regions, June 2007.*

The *Cheonggyecheon*, a river regeneration that symbolises the transformation from a car-oriented city to a people-friendly metropolis.
PHOTO: PAUL LECROART/L'INSTITUT PARIS REGION

FROM HARD TO SOFT CITY: THE MAKEOVER OF **SEOUL**

Seoul has experienced a change of paradigm since the early 2000s, moving on from a hard, functional and growth-oriented city to a slower, more sustainable and people-minded model. Rethinking its road infrastructure as public spaces has played a major part. But can the entire city and metropolitan area shift to a greener growth type of development that gives healthier living conditions to its citizens?

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Hee-Seok Kim, Visiting researcher, Environment Planning Institute, Seoul National University

The political, economic and cultural centre of South Korea since the fifteenth century, Seoul is the nation's largest city today, with a population of 9.8 million inhabitants. The Capital Region, including the city and its suburbs, has a population of 25.4 million, which amounts to half of the national population. Seoul's urban planning has been influenced by the global shift of planning paradigms and, more importantly, by the economic growth and democratization of South Korea.

HARD CITY UNDER APPOINTED MAYORS (1950s – 80s)

The majority of the foundational developments of today's Seoul occurred between the end of the Korean War in 1953 and the Seoul Olympics in 1988, mostly under dictatorships. Seoul grew up wide and high through the annexation and development of peripheral areas and urban renewal of slums by building high rise apartment complexes *en masse*. As a result, Seoul's administrative area expanded more than twofold and its population grew more than sevenfold between 1949 and 1995. Transport infrastructures including boulevards, expressways, elevated roads and subways were extensively built to link the old centre and newly developed areas.
The strip along *Cheonggyecheon* illustrates the urban planning of the era. Cheonggyecheon is a creek in central Seoul that was lined by slums for the refugees from the Korean War during the 1950s. The stream got gradually covered by roads both at ground and elevated levels throughout the 1960s-70s while the slums were replaced by modern arcades. The new Cheonggyecheon with bustling workshops and huge traffic on two levels of roads became one of the most prominent symbols of industrialization in the city, while the poor were displaced to peripheries and nature was buried under concrete.
Brutal planning aiming for quick results flourished under the harsh political environment, exacerbated by poor state revenue, crony capitalism and the international functionalist planning that prevailed in the post war period. Seoul enjoyed unprecedented growth, expanding modern infrastructures and housing stock, but remained a soulless grey giant, lacking greenery and culture. Rapid modernization of the city within a generation was achieved at the cost of displaced slum residents, destruction of cultural heritage and environmental damage. Hosting large sport events, made possible by economic growth, helped to solve the visible aspects of the problems by pushing the government to invest in the next level of infrastructures. As a result, a series of large parks were created in Seoul in the late 1980s to make the city presentable to the world.

TRANSITIONAL PERIOD (1990s)

South Korea entered its economic and political maturity in the 1990s. The country emerged as

PAUL LECROART/L'INSTITUT PARIS REGION

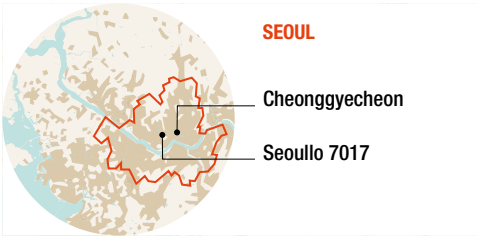
Seoul is gradually becoming more people-centric and bike-friendly: Songjeong-dong area.

the 11th largest economy in the world in 1995. A civilian president was directly elected by the people in 1993 after the rules of three military presidents for thirty years. Mayoral elections were held nationally in the same year. Local elections were the last major step in the restoration of institutional democracy in the country and this also became a stepping stone for the transition to democratic urban planning with more importance given to quality and participation. As mayors were now elected by the people, they became more attentive to the citizens' wishes. Construction of landmark infrastructures increasingly gained more importance, since mayors realized that they serve as the visible reminder of mayoral achievement that leads to re-election and even presidency in the case of Seoul[1].

The rapid economic and physical growth during the last decades crashed in the 1990s with a series of urban and economic disasters. A major bridge and a department store in Seoul collapsed in the mid-1990s due to subpar construction, neglect of maintenance and corporate greed, resulting in the deaths of several hundred people. A year after the country's accession into the OECD in 1996, the Asian financial crisis hit the Korean companies that had expanded on foreign debt, putting an end to rapid economic growth. Both events were considered as the outcome of the blind pursuance of quantitative growth in disregard of quality and integrity.

SOFT CITY UNDER ELECTED MAYORS (2000s - 10s)

Achievements and failures of the previous era made the 2000s-10s an era with slower growth but with more stability in Korea and Seoul. Many of the pre-1990s modernist infrastructures became deteriorated and outdated. What to do with the old infrastructures became one of the important challenges that Seoul faced. A major breakthrough came with the election of Lee Myung-Bak as Seoul mayor (2002-06). He succeeded in changing the paradigm of urban development from economic growth to people and ecology through the restoration of Cheonggyecheon in 2005.



At the turn of the century, the Cheonggyecheon Expressway area was no longer a symbol of modernity but perceived as an unpleasant and outdated space. The restoration project demolishedthe deteriorated elevated road over the creek and reduced the ground road to make room for restored stream and riverside parks. The project was the first large-scale road diet scheme in Seoul giving back space occupied by cars to pedestrians. Its success inspired and paved the way for future road diet projects such as *Gwanghwamun* Plaza[2] under Mayor Oh Se-Hoon (2006-11) and *Seoullo 7017* under Mayor Park Won-Soon (2011-present) by weakening the opposition, mainly composed of drivers and local business owners.

Seoullo 7017 (a road (*lo*) in Seoul born in 1970 and reborn in 2017 as a walkway) is the most recent large-scale road diet scheme in Seoul. Seoul Station Elevated Road connecting the west and east of the station was completed in 1970 but soon deteriorated and became unsafe by 2006. Instead of repairing or demolishing the elevated road, Mayor Park decided to repurpose it into walkable space through an international competition of architects. In 2017, the former motorway flyover was transformed into a 1,024-meter-long botanical walkway by Winy Maas of MVRDV. Its unique location over the central station and wide roads offers a panorama deep into the heart of Seoul. As the structure was renovated with minimum modifications, it is a showcase of the past and future of Seoul.

The project was inspired by the precedents of great metropolises overseas such as New York and Paris where decommissioned infrastructures have been regenerated. Unlike the landmark projects of preceding mayors where old

constructions were demolished to make room for new structures, Seoul Station Elevated Road, the vestige of the industrial era, was not treated as disposable but considered as a heritage to regenerate through its adaptation to contemporary values and not necessarily to look pretty. The same principle was applied to Mapo Culture Depot, another project of Mayor Park that created a cultural space in a decommissioned oil depot built in 1978.

HAPPIER AND CLEANER CITY

The Seoul Metropolitan Government has elaborated decennial masterplans since 1990 to manage the city. The most recent edition, Seoul Plan 2030, prioritised the happiness of citizens over growth in the planning of Seoul. The guiding principle of the masterplan is concretized in the slogan - "*Happy citizens' city where communication and consideration matter*". The slogan is the product of the extensive participation of citizenry. In contrast to previous masterplans of Seoul, democratic decision-making was set as the first priority of the plan in order to accommodate the societal needs of people-centred planning. A delegation of 100 ordinary Seoul citizens was formed to design the future of Seoul alongside experts and municipal officials. The delegation selected 7 important domains for the city to focus the most efforts on: education; welfare; employment; communication; history, culture and cityscape; climate change and environment; and urban regeneration.

Before Seoul Plan 2030, environmental policy for the city mostly focused on internal matters such as expanding green spaces and reducing pollution. In contrast, climate change and energy had little to do with city planning when they were perceived as external factors outside the city boundary. This changed with Seoul Plan 2030 addressing both issues for the first time in the city masterplan. The energy strategy of the city took a stride by calling for not only saving energy but also producing renewable energy within the city. '*One Less Nuclear Powerplant*' represents such efforts. The policy was launched by the city in 2012 to protect the earth and share the burden of energy-producing regions in the aftermath of the Fukushima nuclear disaster. It aims to reduce energy consumption in Seoul as much as a nuclear power plant by producing renewable energy, raising energy efficiency and saving energy. Within five years since its launch, Seoul succeeded in slowing the growth of energy consumption per capita growth more than six other large Korean cities, especially after 2014.

CONCLUSION

Seoul citizens have witnessed a successful transition of the city's urban paradigm from quantity to quality, collective growth to individual happiness and top-down instruction to democratic decision-making. However, the pursuance of quality and happiness based on democratic decision-making started only recently and

SEOULLO 7017 SKYGARDEN - MVRDV, © OSSIP VAN DUIVENBODE, © ADAGP, PARIS, 2019

Seoullo 7017 Project: **an elevated road recycles as a pedestrian "Sky Garden" giving access to Central Station.**

enjoying the fruit is still far from certain. Behind the glamourous facade of the nation adorned by wealth and the Korean Wave, social ills such as polarization, low birth rate and high suicide rate are problems found all over Korea including Seoul. Now that the city boasts tens of urban railway lines and numerous boulevards, the city government can concentrate its resources on improving the life quality of citizens. Although a mere city government is incapable of reforming society, local planning can increase people's happiness. ■

1. Lee Myung-Bak became the president of South Korea in 2008 after his successful tenure as a Seoul mayor.
2. *Gwanghwamun* Plaza was created by transforming the central lanes of Sejong-daero, the widest boulevard in the nation, into a pedestrianized area with permanent exhibition underground.

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SINGAPORE: MYTHS AND REALITIES OF CHANGE

An emblem of successful economic change, the City-State of Singapore now showcases itself internationally as a model of sustainable urban development, embodied in its "City in a Garden" strategy. Beyond the images of futuristic towers festooned with greenery, what is the reality of Singapore? And what can we learn from it?

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Paul Lecroart, Senior Urbanist, L'Institut Paris Region

Singapore's Financial District skyline seen from the Marina Bay megaproject.
PHOTO: PAUL LECROART/L'INSTITUT PARIS REGION

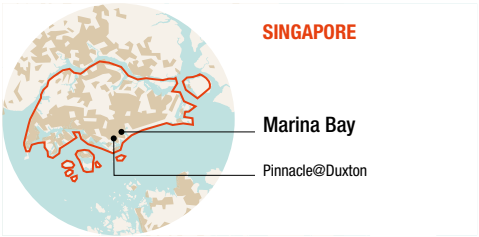
Since its independence from Malaysia in 1965, the story of Singapore has been like a tale of rags to riches: it is the story of a young insular city-state with no resources, beset by poverty, slums and ethnic conflicts, which in half a century became one of the richest countries in the world, a major international port, a global financial hub, and reputedly the most liveable city in Asia[1].

Singapore has pioneered a strategy based on the transformation of foreign capital, technology and expertise into engines of local development. To compensate for its lack of space, it established an integrated plan including the economy, housing, transport and urban planning from the 1960s onwards. For about twenty years, Singapore has been striving to transform this productivist model into a system that is more quality-oriented (a dense but green city) and more circular (e.g. innovative water management), while enhancing its global attractiveness. The city-state is a laboratory for urban and ecological experiments aiming at achieving self-sufficiency for the island territory, which covers 720 sq.km. and has a population of 5.8 million. It sometimes forgets that it is at the heart of a metropolitan region with a population of 9 million covering southern Malaysia (Johor) and northern Indonesia (Batam Island), which supply the resources and cheap labour that fuel its growth.

INTEGRATED PLANNING

If urban planning in Singapore hinges on housing policy and economic development strategies, it is because the two absolute priorities in the 1960s were the large-scale construction of housing and job creation.

Revised every 10 years, the *Concept Plan* defines the city's spatial planning vision for the next 40-50 years. The first *Concept Plan* since independence (1971) organised the territory in a ring pattern with dense new towns around the edge of the island, thus preserving the natural resources of the interior; the 2011 *Concept Plan* lays emphasis on increased urban density and greening.



The *Master Plan* is the city's 10-15 year development plan. It is implemented by a public body, the *Urban Redevelopment Authority (URA)*, and is revised at five-year intervals. As most of the land is state-owned, planning rules apply to private developers both via local development plans and via 99-year leases. The 2014 *Master Plan* put forward the concept of an "inclusive, liveable and attractive city", placing the emphasis on "green density", the identity of individual neighbourhoods, and public space, the latter having received scant attention over recent decades. Despite an efficient public transport network and traffic regulation policies (congestion charge), public space in Singapore is still car-oriented: ground-level developments, pedestrians and cyclists have been neglected in the functionalist design of the city.

Between 1965 and 2017, population density rose from 4,855 per sq.km to 7,996 per sq.km., while the total area of the territory grew by over 20% from 527 sq.km. to 720 sq.km., owing to harbour infilling and the creation of manmade islands. Officially, the *Master Plan* forecasts a population of 6.5-6.9 million by 2030; the unofficial figure is 9 million or more, which would make Singapore into one of the densest areas in the world with about 12,000 inhabitants per sq.km., taking into account 4,000 hectares of new infill. Increased urban density and the construction of mega-towers are now hotly debated topics.

Initiated in the 1980s, Singapore's mega-project is *Marina Bay:* 360 hectares of waterfront reclaimed from the sea combining the kind of iconic products that investors love: luxury hotels, shopping centres, residential and office towers, museums, conference centres, etc. Over 1 million square metres and 9,000 housing units remain to be built.

Singapore: a melting pot of cultures, religions and urban fabrics. In the background: Pinnacle@Duxton, a massive project of condominiums.

A CITY FOR ALL?

The Urban Redeveloppment Authority (URA) and the Housing & Development Board (HDB) are responsible for the design and development of major urban neighbourhoods. This results in a feeling of architectural monotony, which recent HDB-led schemes seek to remedy by diversifying the forms and types of housing being developed. Singapore is one of the few attractive cities where housing prices have risen in line with changes in average income. 82% of residents live in state-owned properties built by the HDB. Most of them (95%) own their homes for 99 years (via state-aided loans); low-income residents rent their homes. The HDB retains ownership of the land, maintains the outside areas, and controls settlement policy. A quota system exists to ensure ethnic diversity at urban district level. According to Michael Koh[2]: "*Malaysians represent 15% of the population of Singapore, and the HDB authorises no more than 18% of Malaysians in each group of buildings*". Wealthy foreign residents have access to the free market, where the price of a home often exceeds one million Singapore dollars, despite anti-speculation taxes. In recent years the HDB has put high-end high-rise condominiums such as Pinnacle@Duxton on the market, thus adding to tensions in the housing sector.

STRATEGIC WATER

Long dependent on Malaysia for its supplies, in the 1990s the city-state put in place an innovative water management strategy based on the idea of "closing the water cycle" without losing a drop. Today, water comes from four sources whose existence is ensured at low cost until 2061: rainwater collected in basins, *NEWater* (waste water purified using membrane technologies for industrial use), locally desalinated water, and water imported from Johor. This strategy is based on a series of innovations and public and private investments that have transformed the landscape: the reservoir parks created in the centre of the island have become outdoor leisure areas, and in 2008 the *Marina Barrage* dam project transformed the old Singapore harbour into a freshwater reservoir.

Singapore is obsessed with cleanliness, greening, and the optimisation of space to offset its population density. Having decontaminated two highly polluted river basins, in 2006 it launched *Active, Beautiful and Clean* (ABC) Waters, a programme that involved the cooperation of two agencies, the National Parks Board (NParks) and the Public Utility Board (PUB), along with various non-governmental organisations, with the purpose of stream restoration by planting techniques.

GREEN URBANISM?

Greening is a political issue involving the social acceptability of urban growth. The *Sustainable Singapore Blueprint* (2014), a sustainable development project, focuses on the objective of developing 400 km of inter-park connectors (+32% by 2030) and uncovering 100 km of underground rivers; however its target of increasing the green space ratio to 0.8 hectares for 1,000 inhabitants may not be reached.

The concept of Singapore as a "city in a garden" is a powerful lever for changing its global image, drawing on both technological innovation and the creation of a futuristic ethos. With its giant solar trees and its biomass power plant, Bay South Garden (54 hectares in 2012) has become a tourist attraction that produces renewable energy. In the bay, a 350-hectare man-made island to which the city's waste incineration residue will be shipped until 2035, has been opened to the public for leisure activities and bird-watching.

SINGAPORE'S GREEN GROWTH MODEL RELIES ON FOSSIL FUELS…

Helped by its tropical climate, Singapore is a pioneer in the greening of roofs and terraces. 72 hectares have already been planted (goal of *Green Building Masterplan:* 200 hectares by 2030), mostly on skyscrapers that are inaccessible to the public. Early results have shown that vegetation reduces the temperature and energy requirements of the buildings (for air-conditioning), but its impact on biodiversity, air quality and CO_2 emissions is weak or even non-existent.

In the space of 50 years, Singapore has experienced profound social, economic and urban change. The resilience of its model has allowed it to weather numerous crises: riots in the 1960s, financial crises (1997, 2001 and 2008), and a health crisis in 2003.

Its engagement on a more sustainable environmental trajectory is remarkably managed and showcased via major innovative public-private projects. And yet Singapore has one of the largest per capita carbon footprints in Asia[3], and 99% of its energy comes from natural gas, which is non-renewable and emits CO_2 pollution. Erosion of biodiversity in the city-state will increase if growth continues at the current rate.

The challenge in Singapore is also one of social resilience, given the delicate balance to be maintained between ethnic groups (Chinese, Malaysians, Indians and others) and between citizens, permanent residents and the city's 1.6 million non-residents. The current strategy, based on increasing foreign investment in high-end real estate, tourism and casinos, could threaten social cohesion and quality of life, which are already fragile. In 2018 Oxfam[4] ranked Singapore 149th out of 157 countries in its social inequality index.

The experience of Singapore shows that well thought out urbanism can provide quite a pleasant living environment combining centrality with easy access to mobility and nature. Increased urban density combines with a partially successful attempt at greening, reducing the presence of cars, and, until now, maintaining social and ethnic diversity in the city. This model, which Singapore is now exporting to China, India and Africa, relies on a high degree of public regulation and social and political control. ■

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1. According to the *Mercer Quality of Living Ranking* 2018.
2. Michael Koh, Advisor at the Centre for Liveable Cities, Singapore. Interview, May 2018.
3. According to the *Ecological Footprint Calculator* (WWF 2014) we would need 4.2 planets if we all lived like the people of Singapore.
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MEDELLÍN: THE ROOTS OF SOCIAL URBANISM

A Mecca for drug trafficking and urban violence until the 1990s, Medellín is now hailed for its urban and social transformation, embodied in projects widely covered in the media such as its Metrocable, its urban escalators and its library parks. But what were the cultural, social and participatory dynamics at the root of these transformations? How were they mobilised by strategy-minded mayors? And what is the situation today?

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Luis Fernando González Escobar, Architect, Associate Professor at the Architecture Faculty of the National University of Colombia (Medellín)

The world's media continues to be thrilled by the "Medellín Miracle", at least since 2012, when the city was dubbed Most Innovative City of the Year by the Wall Street Journal. Thanks to this media coverage, most of the story of the transformation of Medellín is now told in the present tense. Knowledge of the pre-existing context and the factors that made it possible to overcome obstacles is nonetheless essential if we are to fully understand it. The dynamics that were created around community forums, integrated programmes and strategic plans in the 1990s acted as incubators for projects and facilities that are now recognised all over the world.

THE 1997 STRATEGIC PLAN WAS A KEY DRIVER FOR SOCIAL CHANGE

YEARS OF CRISIS

The 1980s were a complex period for Medellín and Colombia, where numerous combined factors impacted urban dynamics. Between 1978 and 1984, the country went through one of its worst economic crises and witnessed the decline of its productive infrastructure. In such a context, Medellín was highly vulnerable. Extremely specialised in textile manufacturing and very dependent on this sector, the city collapsed along with these industries, which had marked it with their architectural symbols, and there were negative effects on formal employment.

Despite a more moderate population dynamic in the 1980s, Medellín struggled to absorb the urban growth of previous decades, which had been marked by large-scale rural flight caused by the civil war, *La Violencia* (responsible for at least 200,000 deaths between 1946 and 1962). The city saw its population increase fourfold between 1951 and 1985, from barely 350,000 to almost 1.5 million (it now has a population of 2.5 million, with 3.8 million in the entire metropolitan area). Despite the efforts of local and national governments, new arrivals settled illegally and informally, covering the mountainsides with "pirate" neighbourhoods. *El tugurio,* the shantytown, became a familiar feature of the cityscape. Managing emergencies took precedence over planning, which was unable to cope with the impending crisis.

MAXIMILIAN GAWLIK/L'INSTITUT PARIS REGION

The change in the city is creating confidence among young people. Dancers in front of the Moravia Cultural Centre.

Medellín occupies a choice geostrategic position between the Caribbean Sea and the Pacific Ocean, providing access to Central and North America. Smuggling is a traditional activity, and its well-trodden routes allowed drug trafficking to structure itself into a large-scale illicit marketplace. Its growth was fuelled by de-industrialisation, unemployment, the informal economy and informal urbanism. It relied on a generation of young city-dwellers, the sons of rural migrants, who were marginalised in ghettos. Narcotrafficking emerged as an economic alternative, or indeed an opportunity for social promotion and a route to power. Medellín thus found itself at the heart of an illicit drug market, mainly for cocaine, which was globalised at an early stage.

Once a "city at war with drugs", Medellín became "Cartel central", with the infamous Pablo Escobar at its core. In addition to the conflict between the Colombian state (allied to the USA) and the drug traffickers, there were struggles between rival cartels and the urban political guerrilla movement, resulting in a spiral of violence. In 1991, this made Medellín the most dangerous city in the world, with 365 homicides per 100,000 inhabitants.

Even after Escobar's death in December 1993, urban society and culture continued to be marked by the effects of drug trafficking and crime. And yet it was at this most critical point that "alternative futures", as they were called at the time, began to emerge.

THE STRATEGIC PLAN

Between 1995 and 1997 the *Strategic Plan for Medellín and its Metropolitan Area* for 2015 was drafted. The processes and dynamics triggered during its elaboration make this plan into a fundamental reference document.

As never before in Medellín, public institutions, social organisations, the private sector and the University converged to develop the plan. The "Presidential Council for Medellin and its Metropolitan Area", created by the national government in 1990, brought key players together and launched forums called "seminars for alternative futures". Between 1991 and 1995, this work

MAXIMILIAN GAWLIK/L'INSTITUT PARIS REGION

Several lines of the Metrocable serve the neighbourhoods on the mountain slopes, like Juan XXIII in the west of the city.

led to the drafting of participatory and community proposals collected from "communal forums".

The *Strategic Plan* included proposals from the private sector, which ran the *Antioquia 21* initiative in 1996 (named after the region of Medellín), but the driving force of the plan was its social, community-led and participatory dimension. This participatory thrust was underpinned by the new Colombian Constitution of 1991, designed as a social pact that recognised all the components of Colombian society and increased the power of the mayors.

Local Development Plans thus fuelled the dynamic. The participation of social and cultural actors was decisive in improving understanding of areas, their populations and their problems, be they small districts or large sectors of the city. In permanent think tanks, set up in 1992, participants discussed education, employment, communication, culture, young people, the role of women, the environment, and local issues, subjects that all featured in the Strategic Plan. They gave rise, for example, to the concept of the "Educating City", which was taken up ten years later by the mayor Sergio Fajardo and is now embraced far beyond Medellín.

Groups that suffered from discrimination became actively involved in pioneering projects, such as the Integrated *Slum Upgrading Programme of Medellín* (PRIMED), launched in 1992, which recognised and took charge of the city's slums. The creation of "Civic Life Nodes" foreshadowed the return of public authority to these districts.

TODAY

Although other factors played a part, the *Strategic Plan* defined lines of action and structure-forming projects that were implemented from 1998 onwards via various municipal plans. Their names may have been changed, they may have been used to serve political and urban marketing strategies, and their architectural aesthetic may have been overstated, but they all contributed to the city's transformation.

Poverty and inequality have not disappeared from Medellín; indeed they remain decisive factors. Behind all the spectacular architecture, there is a familiarity with, and a technical capacity for, negotiation and dialogue between the various stakeholders. This capacity is gradually weakening, and it needs to be redefined if Medellín wants to continue to move towards "social urbanism", a concept now recognised all over the world. ■

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INTERVIEW

"SOCIAL AND URBAN PROJECTS HAVE CHANGED THE FACE OF MEDELLÍN"

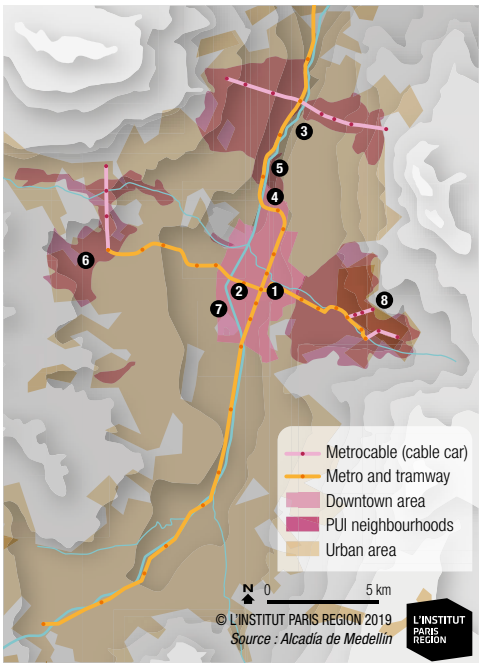
Ximena Covaleda B.,
Architect UNALMED (National University of Colombia, Medellín)
and Master ETSAB (Barcelona School of Architecture)

PHOTO: XIMENA COVALEDA B.

Medellín has changed dramatically in the last 20 years, from a city plagued by violence and urban informality to a prize-winning model for social and educational urbanism. How did this start off from your point of view?

Ximena Covaleda B. The transformation of Medellín began in the 1990s with the social and urban project *PRIMED* (Integrated Slum Upgrading Program of Medellín). The numerous actions in public services included many small-scale projects such as playgrounds. Actions were broadcast publicly in the weekly TV program *Arriba mi Barrio* that showed the people and the problems of neighborhoods, and how their change was conducted.
In 1994, the transformation continued with *San Antonio's Square* ❶, in the very south of the downtown area. By the end of the 1990's *EPM* (Medellín's municipal public utilities company) developed *The Barefoot Park* ❷ near its headquarters. As a valuable new public space, it became a famous resting and gathering place. These two places were the background of all future projects in the city.

SECTORS AND PROJECTS OF **TRANSFORMATION**



The transformation of Medellín has relied on visionary and strategic mayors. Could you tell us more about some of the major projects they first carried out in the poor neighbourhoods?

X. C. B. As Medellín's first mayor of this century (2001-2003), Luis Pérez Gutierrez kick-started the urban and social revolution in one of the deprived shanty districts in the northeast of the city when he built a cablecar line to connect the citizens of this sector to the metro system.
Mayor Sergio Fajardo (2004-2007) developed a strategy to improve the poorest, mostly peripheral neighborhoods. *Juan Bobo* ❸ creek served, as for example, as a pilot project for the environmental and social housing program to replace slums. Several poor city neighbourhoods were the subject of the PUI program (Integral Urban Projects), which combined a public library, a Cedezo (small-business local development center) and local public spaces.
A *School's quality program,* with 10 new facilities, was also developed.
A large abandoned lot in the northeast, along with the nearby Universidad de Antioquia's main campus and the Botanical Gardens, has been transformed into the higher-knowledge-concentration area, including a newly built science museum and

exhibition hall: the *Explora Park* ❹. The area is well connected to the city center and Carabobo pedestrian street in the South, and to Moravia in the North. The latter, a densely settled neighborhood, saw in 2009 the opening of the *Moravia Cultural Center* ❺, designed by architect Rogelio Salmona.

As confidence in the civic capacity was building up, it seems that mayors enlarged their scope of actions to transport, facilities, public space and greening projects in other parts of the city ?

X. C. B. Under the mayor's mandate of Alonso Salazar (2008-2011), the South American Games of 2010 took place in Medellín, for which the city improved its sport facilities zone. Other great achievements were the *Buen Comienzo* program, the construction of nurseries in the peripheral neighborhoods, and the new mobility strategies. The latter were formulated and implemented through an inter-modal connected urban public transportation system, including cable car, metro train, tram system and a publicly-owned bus system. The northwestern Comuna 13 ❻ saw the construction of the *escalators* project.
Mayor Aníbal Gaviria (2012-2015) developed the so-called *Uvas* (Articulated living units). Taking place in many boroughs of Medellín, the program took advantage of large open spaces that surrounded EPM's numerous water tanks all around the city. These spaces were then equipped with urban furnishings and transformed into successful public neighborhood squares. Another project, *River Parks (Parques del Rio)* ❼, has started to be realized along the Medellín River in order to connect both riverine districts of the city. Once the vehicle traffic along both sides of the river has been tunneled, its surface will (hopefully) be transformed into a linear park.
Finally, the *Metropolitan Green Belt* strategy proposed to contain and control the urbanization at the top of the hills: for example by creating the *Circunvalar garden* ❽ in the central and eastern hills, that will articulate with the metropolitan green belt. The future will tell us if all these projects will have a lasting and structural impact on Medellín's development. ■

Interview by Karim Ben Meriem and Paul Lecroart

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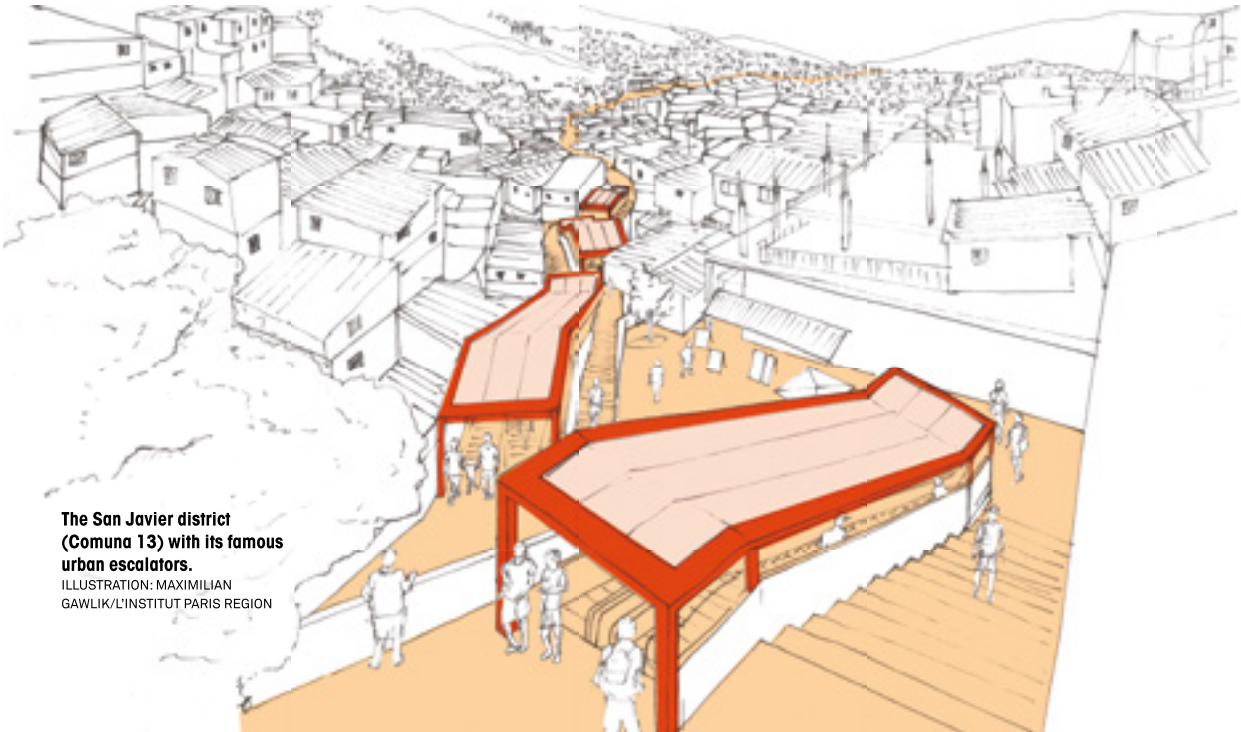

The San Javier district (Comuna 13) with its famous urban escalators.
ILLUSTRATION: MAXIMILIAN GAWLIK/L'INSTITUT PARIS REGION

SCANNING CITIES

Is Paris denser than London? Is New York wealthier than Singapore? How do the carbon footprints of Moscow, Tehran and Toronto compare? In the context of metropolitanisation, cities are increasingly being measured, gauged, classified and compared. The following Key References aim to bring together resources on a variety of themes, maps and statistics, allowing reasoned comparisons.

****

Maximilian Gawlik, Landscape Architect and Urbanist,
with **Paul Lecroart**, Senior Urbanist, L'Institut Paris Region

The construction of these *References* is the result of new work on data collection, analysis and cartography based on numerous international sources that have been cross-referenced and checked. For practical reasons, only 18 cities have been selected: not only large cities that occupy a prominent place in this book, but also cities whose inspiring projects are mentioned in an article. To gain a closer understanding of the geographical reality of these metropolitan regions, it has often been necessary to step beyond administrative frameworks and compare different scales. The methodology, scope and sources are detailed on page 97.

These *References* include:

- Cartographic references showing geographical features and extent of urban areas;
- Administrative references (municipal and regional boundaries);
- Statistical references relating to surface areas, populations and densities;
- A barometer that compares cities based on the following themes: current and future demographic dynamics; global positioning (*Global Power City Index*); economic performance (GDP per capita); income inequalities (Gini coefficient); quality of mobility facilities (*Urban Mobility Index*); quality of life (*Mercer index*); carbon footprint (*Global Carbon Footprint*).

OBSERVATIONS

These *References* reveal contrasting demographic dynamics. Johannesburg, Beijing, London and Medellín have experienced significant growth in recent years, unlike Seoul, New York and Tokyo, where growth has been much slower. The UN forecasts for 2020-2035 positive average annual growth rates for urban agglomerations, but lower than those of the period 2005-2020, with populations likely to drop in certain cities such as Tokyo.

Density varies according to the boundaries being considered. Undeveloped uplands mask the hyper-density of neighbourhoods in Hong Kong and Singapore. Seoul, Tokyo, Teheran, Buenos Aires and the City of Paris appear to be very dense, while Grand Paris and London have fairly similar, moderate levels of density.

Benchmarking is a measurement and quantification technique that relies on the statistical comparison of sets or structures, often comprising a wide range of factors. Some benchmarks rank cities according to their global positioning. The *Global Power City Index,* for example, puts London at the top of its ranking, followed by New York, Tokyo, Paris, Singapore, Amsterdam, Seoul, Berlin and Hong Kong. Regarding the GDP per capita, New York is ahead of Singapore, Paris, London, Hong Kong, Toronto and

Tokyo. *Brookings*[1] notes that the presence of Asian (especially Chinese), Middle Eastern and African cities among the 300 largest metropolitan economies increased sharply between 2012 and 2016, while that of European and North American cities is declining.

Copenhagen, the Ruhr, Vienna and Tokyo are among the most egalitarian cities of our sample, while Singapore, Hong Kong, Medellín and Johannesburg are the most socially inequitable. In terms of quality of life, Vienna, Copenhagen, Toronto, Singapore and Paris are the highest-ranking cities in our selection.

Analysis of carbon footprints highlights high levels of emissions in wealthy cities and those where cars are used most extensively. In our selection, Seoul, New York, Hong Kong, Singapore, Tokyo, Johannesburg, Teheran, Moscow, London and Beijing have the highest greenhouse gas emissions. These ten cities are in the Top 20 producers of greenhouse gas emissions among a cohort of 13,000 cities. Paris occupies the 23rd position in the study and the 11th in our sample.

COPENHAGEN, THE RUHR, VIENNA AND TOKYO ARE THE MOST SOCIALLY EGALITARIAN IN OUR SAMPLE, SINGAPORE, HONG KONG, MEDELLÍN AND JOHANNESBURG THE LEAST

FURTHER EXPLORATION

Cities are "*relational nodes, constituted by the flows of capital, immigrants and information*"[2] and thus connected to other places in the world: the mobility of urban models and knowledge-sharing on urban policies are an integral part of their practices. Beyond the simple collection of best practices, international comparison makes it possible to explore the approaches, policies and strategies implemented in cities.

At the international level, data collection raises questions on the limitations of comparability relating to the disparity of the sources, their availability, and variations in the definitions and scales that are applied. The geographical definition of urbanisation (a continuous built-up area) is often used in research work[3]: in our work, it has been associated with the nearest administrative area. Benchmark indicators are also subject to discussion because most cities do not appear in rankings. Furthermore, a single statistic is not always enough to illustrate a complex situation, such as social disparities (Gini coefficient)[4]. Some rankings tend to be influenced by the economic vested interests of the organisations that commission them. The benchmark is also an instrument for the orientation of public initiatives[5]; it remains, however, a very efficient way of making what is not measurable, measurable and it facilitates comparison.

Ultimately, international comparison makes it possible "*to observe the urban effects of a globalised, interconnected world*" and to "*distinguish the respective influences of different territorial scales [...] on contemporary urban dynamics*"[6]. It can help us to step beyond categories (northern and southern cities), to observe convergences and divergences, and broaden perspectives. ■

1. Brookings, Global Metro Monitor 2018.
2. McCann, Eugene, *Urban policy mobilities and global circuits of knowledge: Toward a research agenda,* Annals of the Association of American Geographers, 2011.
3. To compare world cities on the bases of their actual expansion, see the method developed by Geopolis http://e-geopolis.org/
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METHODOLOGY

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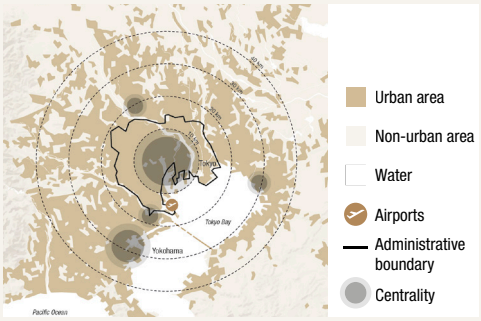

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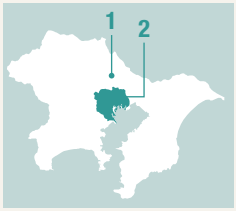
1 Boundaries of region, province, large urban agglomeration or important municipality (case of Beijing).

2 Boundaries of municipality, City-state (cases of Hong Kong and Singapore) or central districts (case of Beijing).



Sources: Openstreetmap, Global Human Settlement (GHS) of the European Commission, Esri, USGS, NOAA, official national and municipal administrative boundaries and other sources.

Metropolitan Barometer

Population Dynamics

Average annual rate of change measuring population growth in urban agglomerations with 300,000 inhabitants or more in 2018. Observation period: 2015-2035.

Source: United Nations, Department of Economic and Social Affairs, Population Division. World Urbanization Prospects: The 2018 Revision, Online Edition.

GDP per capita

The GDP per capita at purchasing power parity (PPP) reflects the values of all services and final goods within a metropolitan area (unless indicated differently), divided by the average population for the same year. As an indicator of economic wealth, it does not reflect the distribution of income and well-being of the population.

Sources: Brookings, Global Metro Monitor (2014), exceptions: Tehran (World Bank, 2014) and Ruhr (OECD.stat, 2012).

Gini coefficient

Coefficient measures the inequality among levels of income in a metropolitan area, unless indicated differently. A Gini coefficient of zero would mean perfect equality, where everyone has the same income.

Sources: OECD.stat, Metropolitan database (2016); OECD, Income Distribution Database (2018); UN Habitat, Global City Prosperity Initiative (2016); UN Habitat, Tables for World Cities Report (2016).

Urban Mobility Index

"Assesses the mobility maturity, innovativeness and performance of 100 cities worldwide. The mobility score per city ranges from 0 to 100 index points; the maximum of 100 points is defined by the best performance of any city in the sample for each criteria". Most of its criteria refer to urban agglomerations (as defined by the UN World Urbanization Prospects).

Source: Arthur D. Little in cooperation with UITP, The Future of Mobility 3.0 study (published in March 2018).

Global Power City Index (GPCI)

The GPCI evaluates 44 selected global cities by measuring multiple indicators of these six urban functions: Economy, Research and Development, Cultural Interaction, Liveability, Environment, and Accessibility. A comprehensive ranking is created by the total scores of the function-specific rankings. Its goal is to "assess and rank the global potential and comprehensive power of a city".

Source: Mori Memorial Foundation, Global Power City Index 2018.

Quality of Living

Mercer looks at "tangible values for qualitative perceptions to establish an objective assessment of the quality of living" for over 400 cities worldwide. Its total index composes from the following categories: Consumer goods, Economic environment, Housing, Medical and health considerations, Natural environment, Political and social environment, Public services and transport, Recreation, Schools and education, Socio-cultural environment.

Source: Mercer, Mercer's Quality of Living Rankings (2018).

Carbon Footprint

Based on the "Global Gridded Model of Carbon Footprints" the carbon footprints of 13,000 cities were made on a globally consistent and spatially resolved estimate. The model takes consumption patterns and purchasing power of the population into account. Definitions of cities used as defined by the Global Human Settlement-City Model (continuous urbanized areas). Even if the published numbers allow us to compare the carbon footprints, the authors remind us that the "results from a global top-down model will never be as precise as more detailed local or bottom-up assessments".

Source: Carbon footprints of 13 000 cities; Daniel Moran et al 2018 Environ. Res. Lett (2018); http://citycarbonfootprints.info

Sources of data for key figures*

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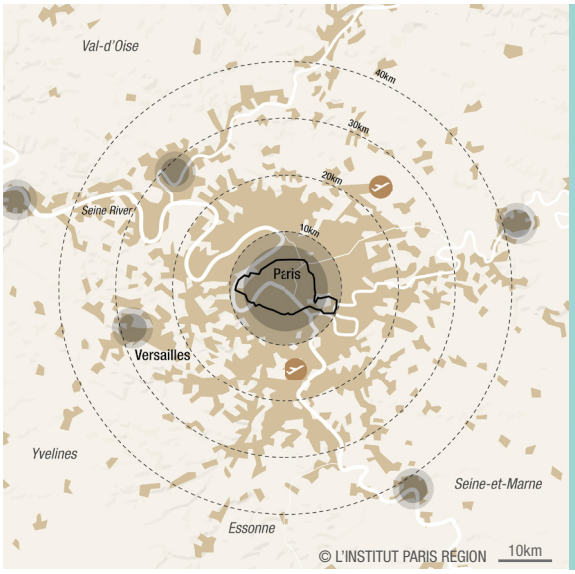
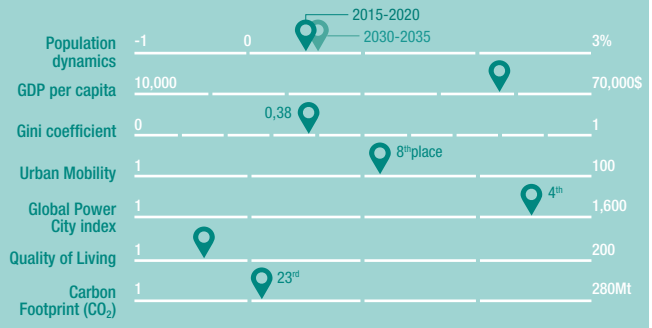
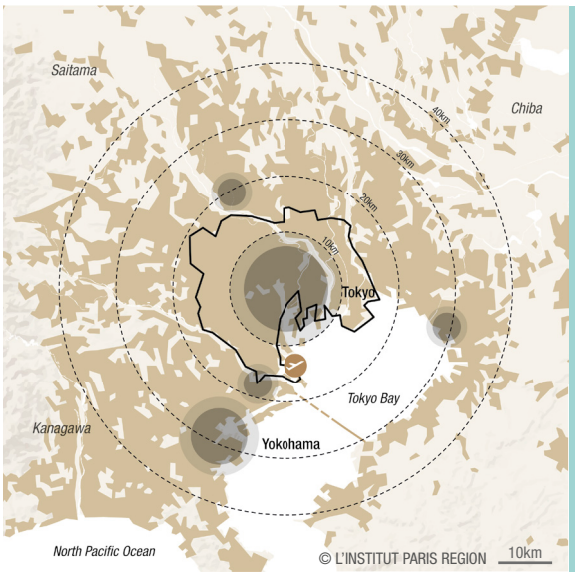
**For all figures numbers are rounded.*



PARIS

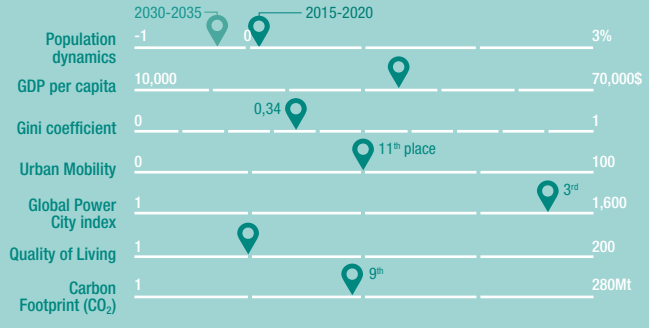
	Area in km²	People	Density people/km²
Paris Region Île-de-France	12,065	12,117,000	1,005
Paris	105	2,190,000	20,860

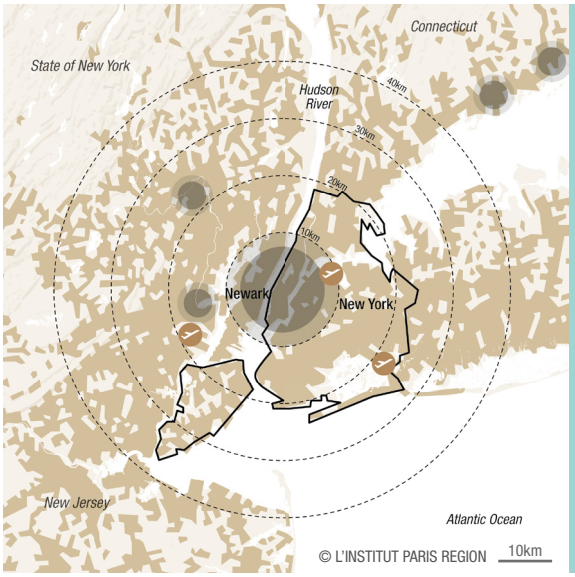




TOKYO

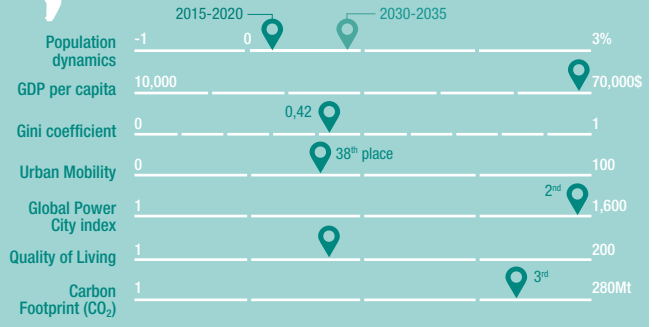
	Area in km²	People	Density people/km²
Southern Kanto	13,110	36,294,000	2,770
23 Special Wards of Tokyo	625	9,467,000	15,195



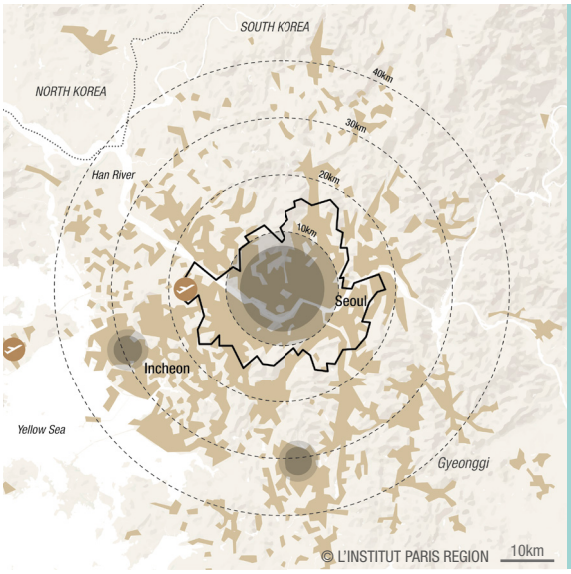


NEW YORK

	Area in km²	People	Density people/km²
Tri-State Area*	33,000	23,000,000	565
New York City	785	8,399,000	10,700



* 31 counties in the states of New York, New Jersey and Connecticut, definition by RPA

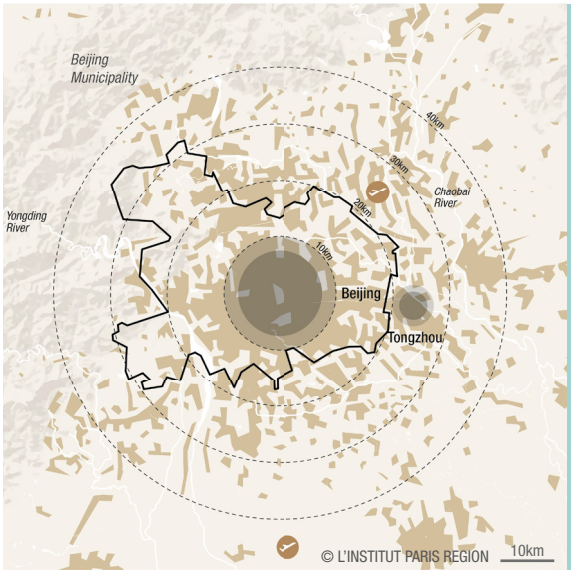


SEOUL

	Area in km²	People	Density people/km²
Capital Area*	11,705	25,383,000	2,170
City of Seoul	605	9,812,000	16,200

Population dynamics	-1 (0) 3%	2015-2020; 2030-2035
GDP per capita	10,000 — 70,000$	
Gini coefficient (national)	0 — 1	0,30
Urban Mobility	1 — 100	29th place
Global Power City index	1 — 1,600	7th
Quality of Living	1 — 200	
Carbon Footprint (CO_2)	1 — 280Mt	1st

* Seoul, Incheon and Gyeonggi Province

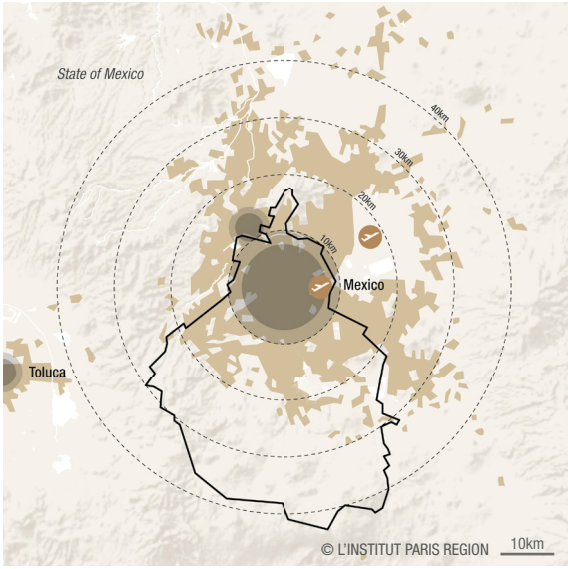


BEIJING

	Area in km²	People	Density people/km²
Beijing Municipality	16,410	21,707,000	1,310
Beijing Inner City Districts*	1,335	13,242,000	9,935

Population dynamics	-1 (0) 3%	2030-2035; 2015-2020
GDP per capita	10,000 — 70,000$	
Gini coefficient	0 — 1	0,32
Urban Mobility	0 — 100	30th place
Global Power City index	1 — 1,600	23rd
Quality of Living	1 — 200	
Carbon Footprint (CO_2)	1 — 280Mt	18th

* Dongcheng, Xicheng, Chaoyang, Fengtai, Shijingshan, Haidian

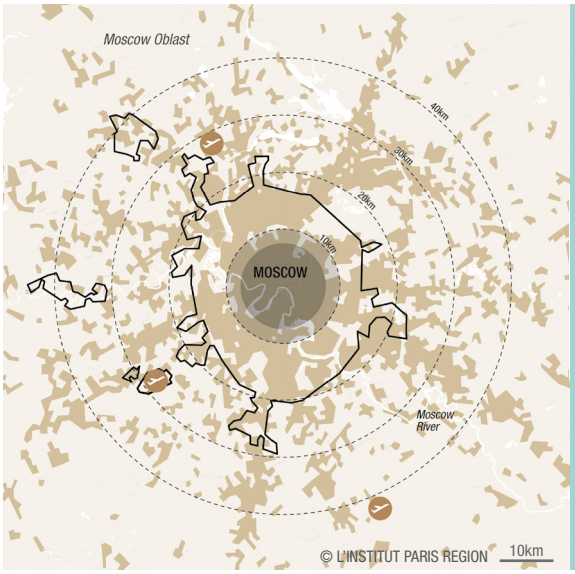


MEXICO CITY

	Area in km²	People	Density people/km²
Valley of Mexico Metropolitan Area*	7,870	20,893,000	2,655
Mexico City	1,485	8,811,000	5,940

Population dynamics	-1 (0) 3%	2015-2020; 2030-2035
GDP per capita	10,000 — 70,000$	
Gini coefficient	0 — 1	0,43
Urban Mobility	0 — 100	50th place
Global Power City index	1 — 1,600	39th
Quality of Living	1 — 200	
Carbon Footprint (CO_2)	1 — 280Mt	37th

* Definition "Instituto nacional de estadistica y geografia".

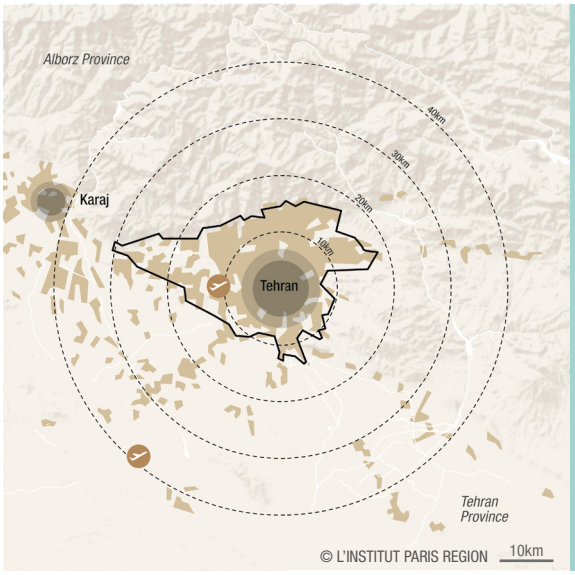


MOSCOW

	Area in km²	People	Density people/km²
Region (City and Oblast)	46,900	19,429,000	415
Moscow Federal City*	1,100	12,198,000	11,090

Population dynamics	-1	2030-2035 0 / 2015-2020	3%
GDP per capita	10,000	2015-2020	70,000$
Gini coefficient	0	0,45	1
Urban Mobility	1	32nd place	100
Global Power City index	1	33rd	1,600
Quality of Living	1		200
Carbon Footprint (CO_2)	1	15th	280Mt

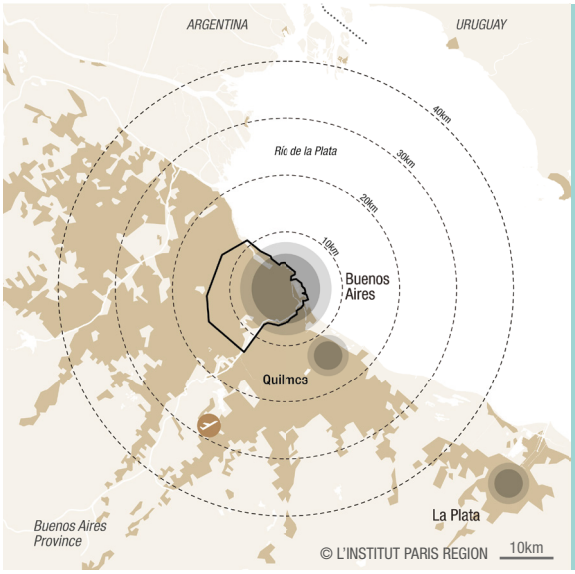
* without New Territories added in 2012



TEHRAN

	Area in km²	People	Density people/km²
Tehran and Alborz Provinces	24,650	15,980,000	730
Tehran	610	8,896,000	14,585

Population dynamics	-1	2030-2035 0 / 2015-2020	3%
GDP per capita (national)	10,000		70,000$
Gini coefficient (national)	0	0,38	1
Urban Mobility	1	92nd place	100
Global Power City index	1		1,600
Quality of Living	1		200
Carbon Footprint (CO_2)	1	14th	280Mt

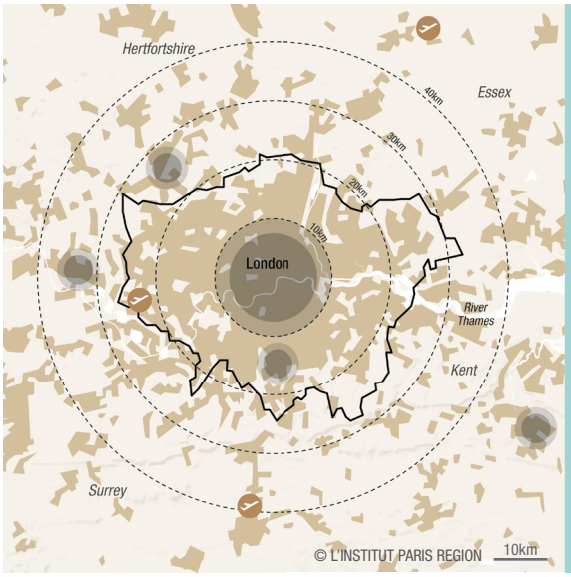


BUENOS AIRES

	Area in km²	People	Density people/km²
Buenos Aires Metropolitan Region*	13,950	14,967,000	1,075
Autonomous City of Buenos Aires	205	2,890,000	14,235

Population dynamics	-1	2015-2020 2030-2035 0	3%
GDP per capita	10,000		70,000$
Gini coefficient	0	0,40	1
Urban Mobility	1	59th place	100
Global Power City index	1	38th	1,600
Quality of Living	1		200
Carbon Footprint (CO_2)	1	36th	280Mt

* Buenos Aires and 40 municipalities (RMBA)

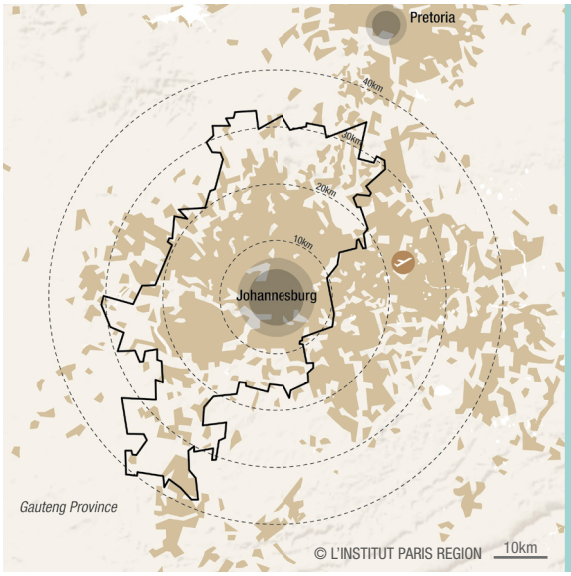


LONDON

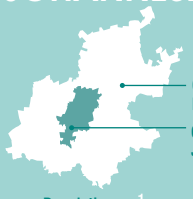
	Area in km²	People	Density people/km²
London Metropolitan Region*	10,020	14,187,000	1,415
London (GLA)**	1,570	8,825,000	5,615

Population dynamics	-1	2030-2035	0 / 2015-2020 / 3%
GDP per capita	10,000		70,000$
Gini coefficient	0	0,41	1
Urban Mobility	1	7th place	100
Global Power City index	1		1st / 1,600
Quality of Living	1		200
Carbon Footprint (CO_2)	1	16th	280Mt

* as defined by Eurostat **City and 32 boroughs

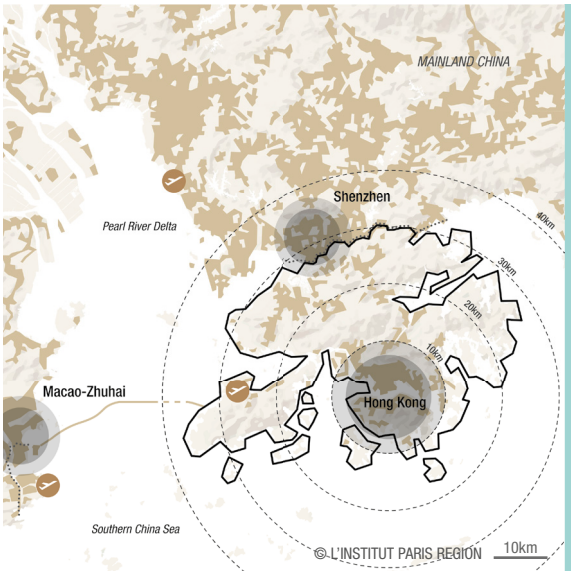


JOHANNESBURG



	Area in km²	People	Density people/km²
Gauteng Province	16,540	12,915,000	780
City of Johannesburg	1,645	5,486,000	3,335

Population dynamics	-1	2030-2035 / 0 / 2015-2020	3%
GDP per capita	10,000		70,000$
Gini coefficient	0	0,75	1
Urban Mobility	0	79th place	100
Global Power City index	1	42nd	1,600
Quality of Living	1		200
Carbon Footprint (CO_2)	1	13th	280Mt

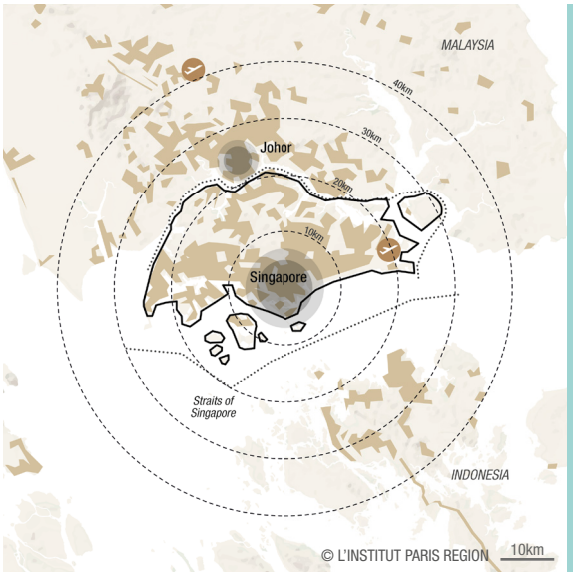


HONG KONG

	Area in km²	People	Density people/km²
Greater Pearl River Delta*	55,890	64,660,000	1,155
Hong Kong	1,110	7,429,000	6,715

Population dynamics	-1	2030-2035 / 0 / 2015-2020	3%
GDP per capita	10,000		70,000$
Gini coefficient	0	0,49	1
Urban Mobility	0	5th place	100
Global Power City index	1	9th	1,600
Quality of Living	1		200
Carbon Footprint (CO_2)	1	4th	280Mt

* Definition GPRD (7 municipalities + Hong Kong and Macao)

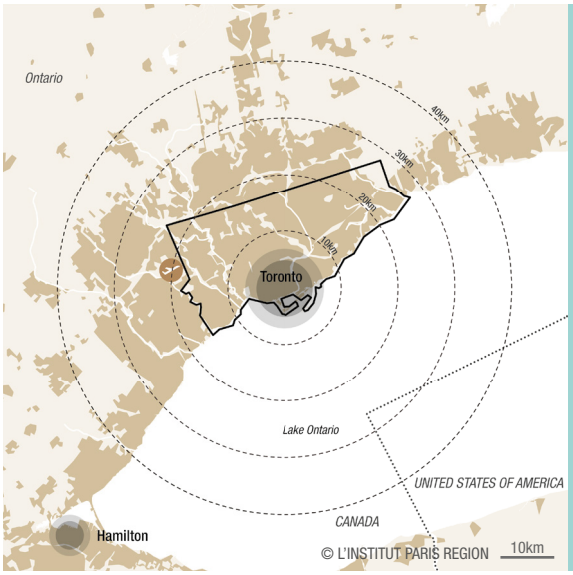


SINGAPORE

	Area in km²	People	Density people/km²
Sijori Growth Triangle*	5,870	9,194,000	1,565
Republic of Singapore	720	5,792,000	8,025

Population dynamics	-1 (2030-2035) / 0 (2015-2020)	3%
GDP per capita	10,000	70,000$
Gini coefficient	0,46	0 / 1
Urban Mobility	1st place	1 / 100
Global Power City index	5th	1 / 1,600
Quality of Living	1	200
Carbon Footprint (CO_2)	7th	1 / 280Mt

* Singapore, Iskandar (Malaysia), Riau (Indonesia)

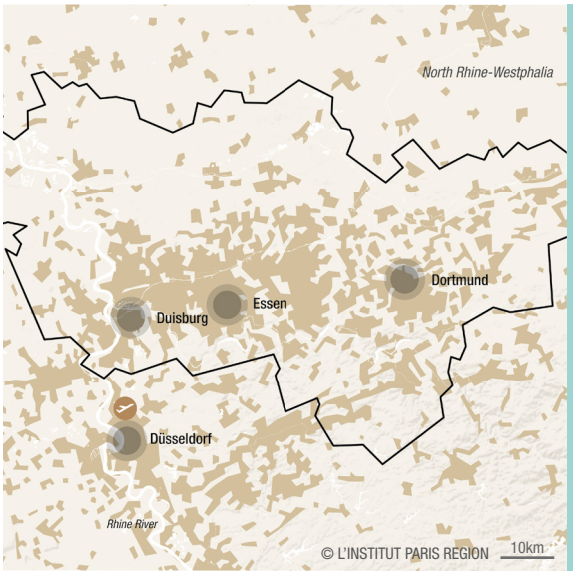


TORONTO

	Area in km²	People	Density people/km²
Greater Toronto Area*	7,125	6,858,000	965
City of Toronto	630	2,930,000	4,650

Population dynamics	-1 (2030-2035) / 0 (2015-2020)	3%
GDP per capita	10,000	70,000$
Gini coefficient	0,41	0 / 1
Urban Mobility	0 / 31st place	100
Global Power City index	14th	1 / 1,600
Quality of Living	1	200
Carbon Footprint (CO_2)	1 / 43rd	280Mt

* Toronto, Durham, Halton, Peel and York



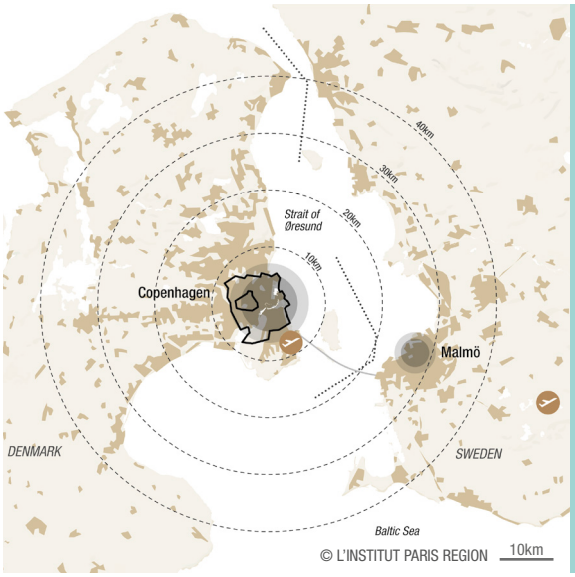
RUHR

	Area in km²	People	Density people/km²
Ruhr Region*	4,435	5,119,000	1,155

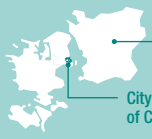
Major cities

Population dynamics	-1 (2030-2035) / 0 (2015-2020)	3%
GDP per capita	10,000	70,000$
Gini coefficient (macro-regional)	0,30	0 / 1
Urban Mobility	0	100
Global Power City index	1	1,600
Quality of Living	1	200
Carbon Footprint (CO_2)	1	280Mt

* Regionalverband (53 local authorities)

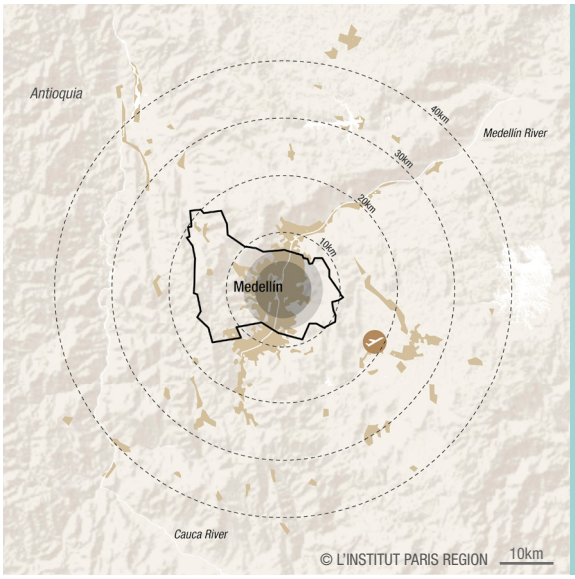


COPENHAGEN

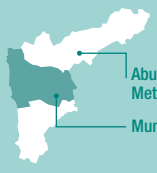


	Area in km²	People	Density people/km²
Øresund Region	20,870	3,901,000	185
City of Copenhagen	85	623,000	7,190

Population dynamics	-1	2030-2035 / 2015-2020	3%
GDP per capita	10,000		70,000 $
Gini coefficient	0	0,28	1
Urban Mobility	1	4th place	100
Global Power City index	1	18th	1,600
Quality of Living	1		200
Carbon Footprint (CO_2)	1	197th	280Mt

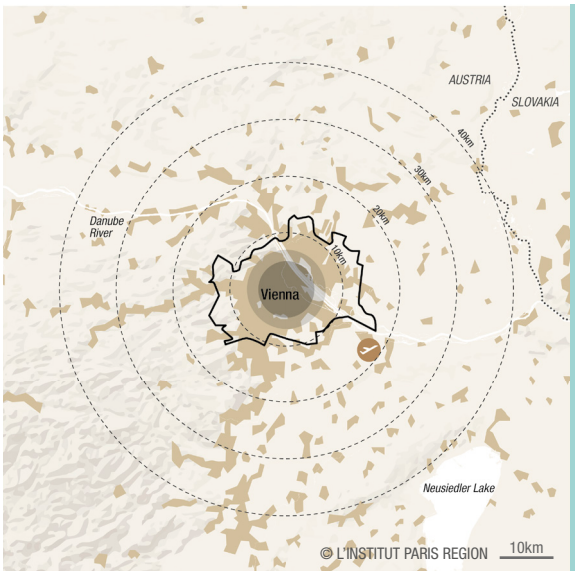


MEDELLÍN



	Area in km²	People	Density people/km²
Aburrá Valley Metropolitan Area	1,165	3,934,000	3,375
Municipality of Medellín	380	2,529,000	6,645

Population dynamics	-1	2030-2035 / 2015-2020	3%
GDP per capita	10,000		70,000$
Gini coefficient	0	0,51	1
Urban Mobility	1		100
Global Power City index	1		1,600
Quality of Living	1		200
Carbon Footprint (CO_2)	1	271st place	280Mt

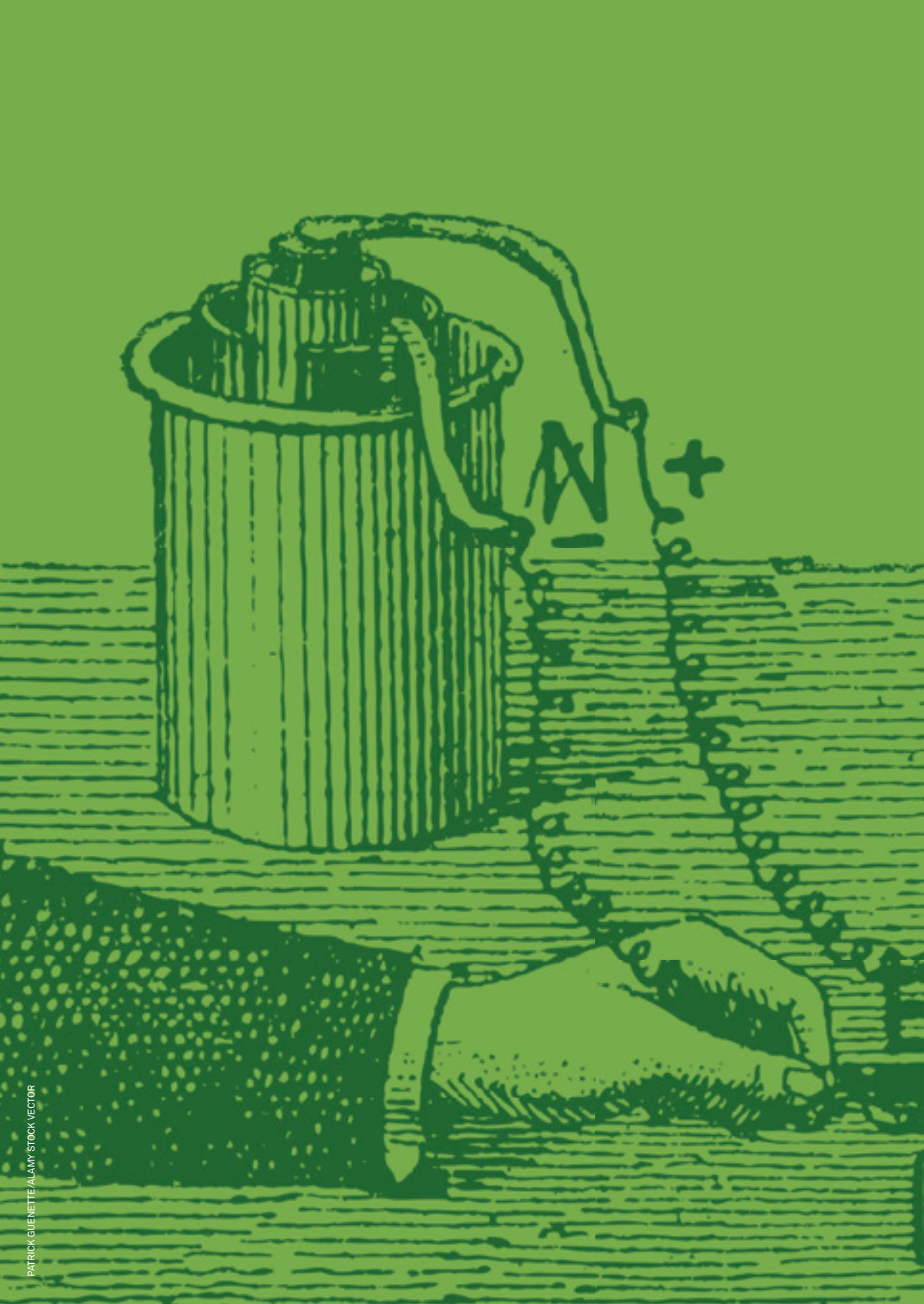


VIENNA

	Area in km²	People	Density people/km²
Metropolitan Region of Vienna*	4,975	2,458 000	495
Vienna (City and State)	395	1,868 000	4,730

Population dynamics	-1	2030-2035 / 2015-2020	3%
GDP per capita	10,000		70,000$
Gini coefficient	0	0,31	1
Urban Mobility	1	6th place	100
Global Power City index	1	17th	1,600
Quality of Living	1		200
Carbon Footprint (CO_2)	1	117th	280Mt

* Stadtregionen, definition: Austrian Association of Cities and Towns



PATRICK GUENETTE/ALAMY STOCK VECTOR

EXPLORATIONS

****

Cities all over the world are experimenting with new solutions to issues such as climate change and social inclusion: low-carbon building, renewable energy production, resource and waste recycling, green infrastructure, sustainable mobility, neighbourhood regeneration and eco-planning on all scales. They are reconnecting with their rivers, rewilding their waterways, encouraging biodiversity, developing urban forests, etc. These explorations can act as catalysts of change, leading to more sustainable urban models. Have these initiatives reached critical mass, allowing them to have an impact at regional level? Do they really represent a new trajectory?

CATALYSTS OF CHANGE

Cities are in a position to become major drivers of global economic, ecological and social change, but their ability to transform and adapt is open to question. Before thinking about new models or overall strategies, experimental projects are carried out everywhere. How can we activate the levers of change within the democratic process?

****

Léo Fauconnet, Political Scientist and Urbanist, with Maximilian Gawlik, Landscape Architect and Urbanist, L'Institut Paris Region

Agrocité, a social urban farming site in Gennevilliers, *Grand Paris*.
PHOTO: ATELIER D'ARCHITECTURE AUTOGÉRÉE

The development model of cities is under threat. They are clearly the places that possess the most resources capable of accelerating economic globalisation and maximising its outcomes, but they may be ill-equipped to deal with ecological transition, even if their density allows them to mutualise infrastructures and limit the consumption of energy and space. According to the phrase popularised by Max Weber, "city air makes man free". But as they grow, cities find their sustainability called into question: urban expansion stimulates car use and generates congestion, pollution and noise; the flow of materials in the "urban metabolism" takes its toll on the environment and creates emissions; natural spaces become scarcer and biodiversity collapses; heat waves occur more often than elsewhere and the human and ecological effects of natural catastrophes are multiplied; the permanent flow of populations makes it impossible to accommodate everyone in acceptable conditions and increases tensions and inequalities.

The vital question that cities have to answer is simple: beyond reducing their impact on the environment, can they roll out innovations for sustainable progress? Will they be able to foster a new form of development? By way of response there are a huge number of experiments and initiatives taking place in the fields of planning, construction and resource management[1], which could turn out to be levers of change in the future. Exploring them, contextualising them and making them systematic are the fundamental challenges of the coming decade.

ENVIRONMENTAL SUSTAINABILITY IN PROGRESS?

Doubts regarding the effectiveness of ecological conversion in development policies remain strong, and "greenwashing" is a reality. And yet a global perspective reveals that real changes are taking place everywhere.

Approaches are becoming more systemic than ever and creating a less conflict-ridden relationship between cities and nature. Metropolitan green belts, which have a long history in London, Seoul and Portland (*Urban Growth Boundary*), and which make it possible to set boundaries for urban growth, are now being superseded by spatial models that seek to bring open spaces into the very heart of large cities. The Copenhagen *Finger Plan* has shown the value of a long-term initiative (see box opposite). Other cities are trialling flexible and hybridised planning models, such as the *Parco Agricolo Sud* in Milan: a huge agricultural park (47,000 hectares) that does not function as a rigid boundary for urbanisation but as a dynamic regional park with an integrated policy.

CAN CITIES AND NATURE COME TO TERMS? THE ANSWER IS: YES, THEY CAN!

The Paris Île-de-France Region has an interesting range of instruments at its disposal, with the *Regional Master Plan (Île-de-France 2030),* the *Regional Ecological Plan* (green-blue grids) and regional nature parks charters. More broadly, the region is experimenting in many areas with nature-based solutions, which aim to gradually build up a fully-fledged green infrastructure (see article by Marc Barra and Nicolas Laruelle, p.112).

It is interesting to note that taking better account of the local context—climate, geography, hydrography, ecosystems, natural settings—encourages people to look for solutions that involve and empower regional actors and to interconnect different scales more effectively. This is a reality, for example, in the Great Lakes region of North America, where the challenges relating to the world's largest freshwater reservoir, which serves over 50 million inhabitants, has led to rewilding projects run at the level of local districts and municipalities (these projects are described in the article by Philip Enquist *et al.,* p.116).

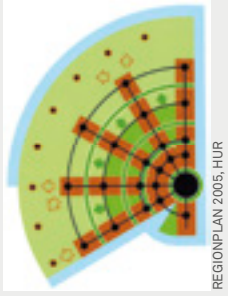
A similar process is underway in Perth, Australia, where the "regenerative city" strategy was first demonstrated in houses, then applied

Green Planning in the Copenhagen Region

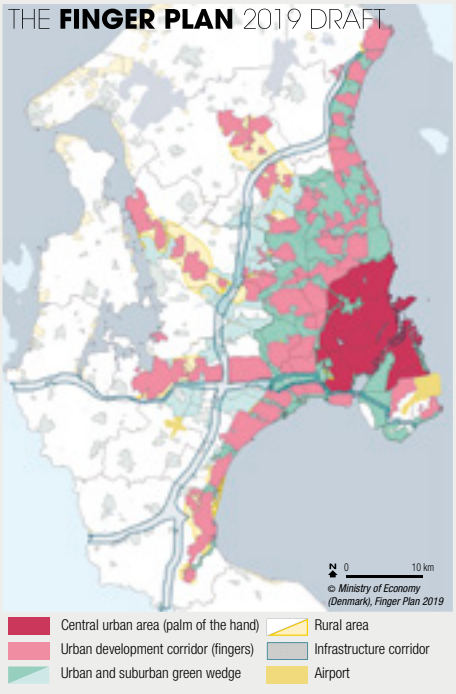
Protecting rural areas from continuous urban growth has, for a long time, been a major challenge for dynamic cities: guided by their geography, London and Seoul have opted for a green belt, the Randstad for a "green heart", and the Ruhr for a linear regional park. These green infrastructures provide essential ecological, agricultural, landscape-related, recreational and urban services, one of whose conditions is the long-term stability of the boundaries between natural and urban space. Copenhagen stands apart in that it has condensed a long-term scheme for the organisation of the regional area into a striking image, the *Finger Plan,* which does not follow natural lines of force (valleys, contours, etc.) This plan, which has been revised six times since it was first formulated in 1947, has shaped the development of Greater Copenhagen around train stations located along five rail corridors. Between the "fingers", it maintains and develops a network of open spaces reaching into the very heart of the city, forming "green wedges". More than green belts, these natural continuities are used for leisure activities and play a significant role in local neighbourhood communities.
In 2007, the revision of the *Finger Plan* was taken away from the mayors and became the responsibility of the State (the Minister of the Economy), which placed more emphasis on growth. For the 2019 *Finger Plan*, contrasting scenarios of regional development were put up for debate. The preferred strategy is to intensify development in the heart of the city (the palm of the hand), to carry out infilling works in the harbour, and to create limited urban extensions around certain stations. ■

Paul Lecroart, *senior urban planner, L'Institut Paris Region*

PAUL LECROART/L'INSTITUT PARIS REGION



REGIONPLAN 2005, HUR



The Finger Plan from 1947 to 2019 and its green wedges in planning documents: compact urban development and large open spaces.

The social housing estate of La Noue, in Montreuil (Grand Paris), undergoing major urban renewal and is part of the "Parc des Hauteurs project".

to city blocks, and finally scaling up to entire neighbourhoods and even cities (as explained in Peter Newman's article, p.121). The environmental approach on larger scales, and sometimes in less dense suburban areas, does not prevent the use of technological solutions, which are nonetheless more sophisticated in metropolitan heartlands and are now being modelled using "environmental design" methods, as in Hong Kong (see article by Jianxang Huang *et al.*, p.124).

There may be a fear of "piecemeal" ecological conversion, with highly localised projects that have a limited effect in regional terms, but such approaches respond to a need to contextualise transformative solutions and reflect a desire on the part of local communities to make responses to global challenges their own[2]. This means that transition should also be a social phenomenon, even if this dimension seems to be the Cinderella of metropolitan development strategies.

SHOULD SOCIAL SUSTAINABILITY BE A CENTRAL CONCERN?

The "*New Programme for Cities*", adopted at the UN Conference on housing and sustainable development in Quito, Ecuador, on 20 October 2016, supports "*a vision of cities for all*"[3]. The respective national governments also take note of the initiatives of some states and local authorities in favour of a "*right to the city*", but without enshrining this as a common principle. Clearly the democratisation of urban policy remains a subject of debate.

Innovations in the social sphere are nonetheless legion. Culture and major sport events are used by cities as instruments for urban

redevelopment in underprivileged areas and districts (see the articles by Richard Brown, p.130 and Matthieu Prin *et al.,* p.132). In a more systemic vein, cities are seeking to put people at the heart of their models to redesign the car-oriented city and bring proximity and continuity back into public space (read Paul Lecroart's article, p.126).

Southern cities have opened up new perspectives in the implementation of development strategies and models of urban management and governance, focusing on the social dimension[4]. In Latin America, the participatory budget of Porto Alegre and the social urbanism of Medellín are now acknowledged. States such as Brazil and Ecuador, as well as Mexico City, have institutionalised the "right to the city" as a legally binding principle framing urban policies. Here, as in large African cities, the implementation of the concept developed by Henri Lefebvre may be somewhat ambitious: it acknowledges informal housing as a legitimate mode of urbanisation, and thus recognises the sovereignty of the communities in question—in particular working-class populations made up of migrants and people who have moved from countryside areas—in decision-making processes concerning the development of their living environments.

In Europe too, the question of the large influx of new populations raises challenges for development policy, especially where housing is concerned (see Marie Baléo's article, p.142). A few cities have placed social sustainability at the heart of their models. Malmö has created an independent commission devoted to this aspect, made up of researchers and municipal civil servants, whose goals are to improve public health, fairness and social wellbeing, and whose recommendations are taken into account in urban planning strategies. Vienna promotes the concept of gender mainstreaming, which makes it possible to assess the implementation of urban policies with regard to gender equality and the accessibility of public space and urban services to women.

Most importantly, Vienna has demonstrated remarkable continuity in the development of a social model based on a policy of affordable housing (see Eugen Antalovsky's article, p.137). The Paris Region also has experiences to share, with its land management tools, the size and dynamics of its social housing pool, its huge investments in urban renovation, and its expertise in the fields of urban social development and dealing with substandard housing neighbourhoods.

SPECIAL ATTENTION MUST BE GIVEN TO SOCIAL HOUSING AND INCLUSIVENESS

In response to the threats posed to these interventionist models, there is an increasing awareness of the importance of housing policy in the sustainable development of cities, as shown in 2019 by the *Appel de Lyon,* an appeal on the part of major European cities "*for a society of affordable housing*"[5]. Of similar value are the investigations and experimentations launched in the framework of the *2022 Internationale Bauausstellung* (*IBA*) in Vienna, with a view to building cities which, as befits their role, are able to guarantee a future and a place for everyone. ■

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5. This may consulted on the website of the International Social Housing Festival, www.ishf2019.com

THE RISE OF **NATURE-BASED SOLUTIONS**

Breaking away from a long-standing exclusively technological approach to planning, the Paris Region now teems with initiatives that rely on nature in order to respond to big-city challenges, especially climate change and biodiversity. But the Region still has to coordinate these often very local projects more effectively to make this "Nature City-Region" model more consistent, clear and desirable.

****

Marc Barra, Ecologist, and **Nicolas Laruelle**, Urbanist, L'Institut Paris Region

Twenty-five years ago, while the French government was approving a master plan for the Île-de-France region (SDRIF 1994) that was still dominated by issues relating to the planning of "grey infrastructures" to support urban development (power lines, sewage plants and above all roads and railways), the Land of Berlin distinguished itself by backing up its master plan with an ambitious *Landschaftsprogramm Artenschutzprogramm,* a planning programme focusing on landscape, flora and fauna.

This document set out "green infrastructures" that could cheaply fulfil some of the functions that "grey infrastructures" can only perform at considerable cost. For the first time, it identified and protected "*priority climate protection zones*", large natural suburban areas extending into, and cooling down, the city via "climate exchange corridors".

Over the next decade, work at the IAU, now L'Institut Paris Region, popularised the Berlin plan in planning circles across the Paris Île-de-France region and awakened curiosity in the "nature-based solutions" being developed in other cities.

NATURE CAN MANAGE WATER MORE CHEAPLY AND EFFICIENTLY THAN PIPES AND DAMS

BENEFITS THAT ARE NOW BETTER RECOGNISED

Fields and meadows, forests and woodland, ponds and wetlands, parks and gardens... all these spaces are able to bring significant responses to the major challenges faced by large cities, whether it be to curb climate change (by storing carbon in organic form in the ground and in vegetation) or to adapt to its effects (by cooling cities down during heat waves or by capturing storm-water runoff).

Some urban strategies proclaim, in the form of slogans, a special preoccupation with one of the effects of climate change, for example run-off and flooding. In 2014[1] the concept of the "Sponge City" emerged in several localities in China such as the new town of Lingang south-east of Shanghai, where wetlands have been restored, floodable parks created, and thousands of trees planted to store storm-water that can be reused in dry periods. With its "Cool City"[2] concept, the city of Stuttgart has sought to improve wind circulation to remove warm air from the city centre during heat waves, using a network of large parks and rows of trees: all

BIOCLIMATIC URBAN DESIGN

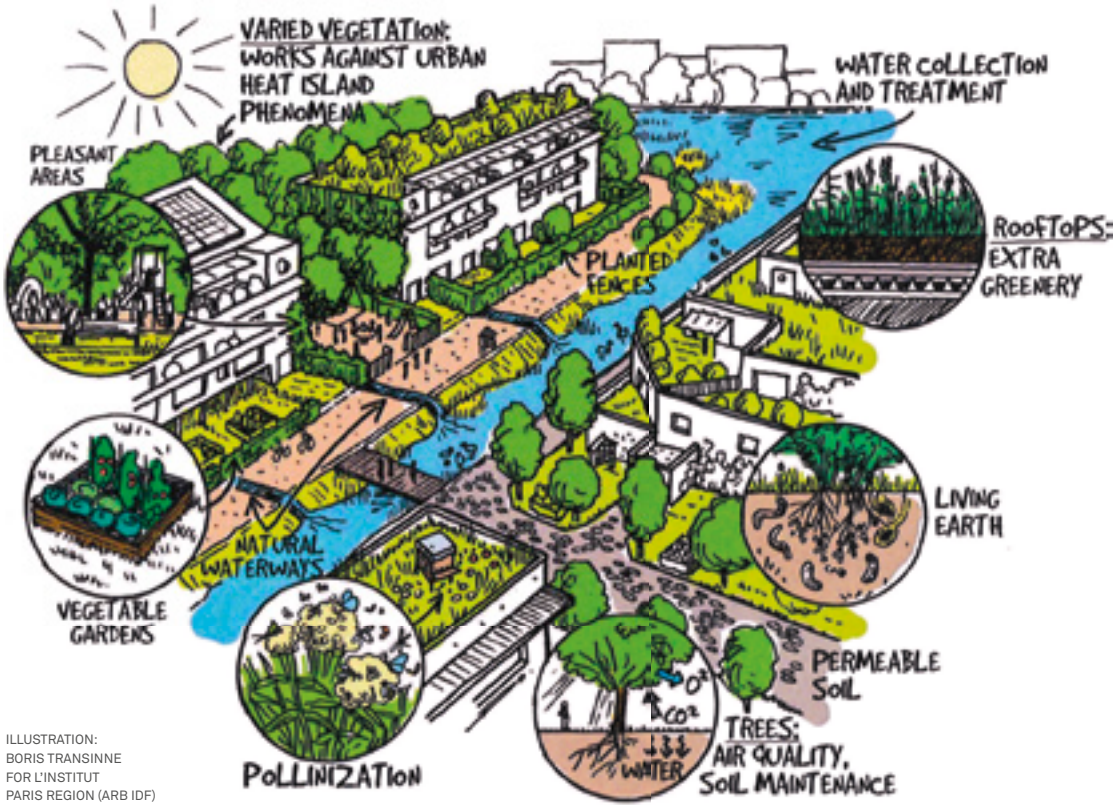

ILLUSTRATION:
BORIS TRANSININE
FOR L'INSTITUT
PARIS REGION (ARB IDF)

building permits are submitted to a meteorologist to ensure that the planned building will not obstruct the air flow.

Because they rely in practice on the same three key elements (maintaining the living soil, increasing plant cover, and re-establishing the natural circulation of water), these approaches are convergent: a *Sponge City* is necessarily cooler thanks to evapotranspiration, and the plant corridors in the *Cool City* allow it to store water more effectively[3]. These approaches provide related benefits (water and air purification, biodiversity, and so on), which are all the more significant because the areas are managed ecologically and interconnected by "green-blue grids" on every scale.

A HOST OF INITIATIVES ON EVERY SCALE

On the scale of the metropolitan region, the idea is to make the city more permeable to nature, as in Rome and Stockholm, where natural parks penetrate into the heart of the city. In the Paris Region, the first *Regional Ecological Plan* drawn up in 2013 sets objectives for the preservation or restoration of "ecological continuities" (reservoirs of biodiversity interconnected by corridors). For the first time it offers, on a fairly detailed scale, an overall image of the regional "green-blue grid". These objectives are supported by the *Regional Master Plan* (SDRIF 2013), which introduces more intra-urban connections. The challenge is still to popularise the forms and functions of this

Revitalisation of wetlands: The Onga Fishway Park in Japan shows the possible social impact of this type of project.

metropolitan grid among the general public, using for example an emblematic species (as in Strasbourg, where simulating the movements of red squirrels makes it possible to evaluate local versions of the metropolitan grid), or an off-beat activity (as in Berlin, where the green grid should make it possible to travel from the countryside to the city centre on horseback!)

On the scale of the street, projects should encourage the creation of swales (ditches), "rain gardens" and the planting of trees: the city of New York states that it has planted a million trees in the space of ten years![4] Spontaneous planting must also be encouraged by supporting community projects, as in Rennes, Lille and Strasbourg. In the Paris Region, the "planting permit" has been very popular in Paris since 2015, and more recently in Pantin, Saint-Denis and Massy.

On the scale of the built or unbuilt plot, maintaining areas of natural soil and increasing plant cover are vital factors. It is also important to promote the use of living roofs on new and old buildings: with almost 30% of its flat roofs planted, the city of Basel is often called the "greenest city in the world"[5]. Since 2001, all new "unused" flat roofs have to be planted, leading to a reduction of night-time temperatures in summer at micro-local level (on roofs) and local level (in the city centre). Other benefits have accrued in terms of sound insulation, air quality, particulate capture, rainwater management, and the longevity of the roofs' watertight systems. In the Paris Region, the Regional Biodiversity Agency is currently carrying out a new survey on some thirty living roofs in the heart of Paris called "Grooves" (*Green ROOfs Verified Ecosystem Service*s), whose early results show the surprising storage capacity of roofs depending on the texture and depth of the soil, and their ability to spontaneously host a wide range of plants and mosses (at least 268 different species!)

The "surface biotope coefficient", a composite indicator used by the city of Berlin since 1998 in construction projects, sets a planting goal for each plot. It helps to raise awareness of the resources that can be mobilised (soil, planted terraces, roofs, walls and façades, permeable

alveolar surfaces, etc.) and of the respective performance of these resources (the most efficient still being natural open ground).
On all scales, reclaiming open ground often turns out to be indispensable. The city of Fukuoka offers several examples of unsealing, including converting a former school car park into a water garden designed with the help of pupils and ecologically restoring the banks of a large potable water basin in Onga Fishway Park. As part of the "*Strasbourg ça pousse*" scheme, the city and metropolitan councils have called on residents' collectives to unseal and ecologically manage over 5 hectares of public spaces from 2008 onwards (pavements, the areas in front of buildings, and paths in cemeteries). In the Paris Region, the Regional Council has offered funding for unsealing initiatives since 2017 as part of its *Plan Vert* (Green Plan) call for projects.

TOWARDS A MODEL FOR THE "NATURE CITY" IN ÎLE-DE-FRANCE?

All these nature-based solutions remain, however, more difficult to implement in the hearts of large cities, in particular in Paris and its immediate suburbs whose density, which is significantly higher than in other European metropolises, has tended to increase since the 1990s. Even when this increased density does not encroach on areas of open ground, the pressure on these areas is intensified, making them less able to fulfil their functions as natural infrastructures. The total surface area of parks and gardens in the metropolitan core has grown more slowly than the population over recent years, and footfall in the areas that do exist is correspondingly higher. Increased density in Paris and its immediate suburbs must be managed carefully, with an *ad hoc* approach to the development of urban brownfield sites. It should also go hand in hand with efforts to achieve balance on a broader scale between urban areas and the countryside. The Paris Region has a rich and varied range of contexts that call for a variety of solutions, as shown by the list of towns that have been awarded the title of "French capital of biodiversity" since 2011: towns in the immediate suburbs of Paris (Montreuil, Courbevoie, Rosny-sous-Bois), towns in the outer suburbs (Saint-Prix, Maurecourt), secondary historic towns (Versailles), new towns (Val Maubuée), and rural towns (Bonnelles).
The aim is thus not only to support and showcase the many local initiatives that exist at regional level, but also to help produce a model for the "nature city" in the Paris Region: a model that is coherent, clear and desirable, not only in order to bring together regional actors but also, as the researcher Camille Girault[6] has shown with regard to Scandinavian cities, to enhance the attractiveness of the Region and the global environmental credentials of France as a whole. ■

FURTHER READING

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UICN France, Paris, 2016
CLIMATE: NATURE-BASED SOLUTIONS FOR CLIMATE CHANGE MITIGATION AND ADAPTATION IN PARIS REGION
ARB îdF, IAU îdF, 2015

1. "Sponge City" *in China – A breakthrough of planning and flood risk management in the urban context.* Faith Ka Shun Chan *et al., in* Land Use Policy, Vol. 76 (2018), p. 772-778.
2. *Cool city as a sustainable example of heat island management case study of the coolest city in the world.* Reeman Mohammed Rehan, *in* HBRC Journal, Vol. 12 (2016), p. 191-204.
3. The sponge city concept is not applicable to all types of urban terrain, in particular the limestone, clay and gypsum plateaux characteristic of the Paris Region.
4. https://www.milliontreesnyc.org
5. *Végétalisation biodiverse et biosolaire des toitures.* Baumann Nathalie and Peiger Philippe, Eyrolles, 2018.
6. Camille Girault, "L'affirmation de l'exemplarité environnementale comme stratégie de métropolisation des villes nordiques", *EchoGéo,* 36, 2016, Online.

PHILIP ENQUIST – NATIVE WETLANDS ADJACENT TO LAKE MICHIGAN IN CHICAGO.

THE **"RE-WILDING"** OF GREAT LAKES CITIES

The Great Lakes Region, with its ample resources of fresh water, has to restore its aquatic ecosystems. By pursuing such a strategy, the Great Lakes Cities could lead the world in re-introducing natural systems to urban areas to resolve flooding and other urban ills.

****

Philip Enquist, Consulting Partner, Skidmore, Owings & Merrill LLP (Chicago, US),
Meiring Beyers, Director, Klimaat Consulting & Innovation (Ontario, Canada)
and **Drew Wensley,** CEO, Moriyama & Teshima Planners (Toronto, Canada)

Cities within the Great Lakes International Basin are challenged to get ahead of the stresses placed on the ecological and urban systems caused by changing climates. The re-wilding of cities means the re-introduction of natural landscape systems into the urban environment. It softens infrastructure and allows cities to absorb the stresses and bounce back from negative climate impacts of increased heat waves or intense storms. City governments and agencies and community groups are starting to

work together with this approach. There is still a long way to go, but urban design and engineering consultancy firms like ours can play a leading role.

THE CLIMATE CHALLENGE AND GREAT LAKES CITIES

The Great Lakes Basin is a major international watershed that extends from Duluth, Minnesota to the Atlantic Ocean, engaging 5 major fresh water lakes as well as the St. Lawrence River. It is the largest repository of surface fresh water on the planet. Shared by Canada and the US, the Basin is home to over 50 million people, many living in large cities such as Chicago, Milwaukee, Detroit, Cleveland and Toronto.

Though troubled by disinvestment, and ecological deterioration, the region as a whole has the basis of a vibrant international trade economy and anticipates future growth.

The climate challenges we face in this century are requiring us to explore solutions that point toward resiliency and health of our urban environments and move beyond business as usual. They also connect us - and there is urgency to act. Revitalizing Great Lake Cities and making them healthy is key to a national and international resiliency strategy, which will help to make them smarter and cost effective.

Climate adaption and mitigation actions implemented today will manifest as a stabilized warmer climate of around 2ºC. But, if we carry on as usual, further changes from 2050 to 2100 (+6ºC) will occur. In the Great Lakes Region, a projected warmer and longer summer season will increase energy demand and water consumption. Occurring heat waves will place a higher burden on urban health. Winter and spring moisture will likely increase with rising water temperatures, potentially causing more intense frost or freezing rain damage. Pest and disease vector survivability will change, and so will our ability to implement sustainable biodiverse agricultural practices.

FROM UNSUSTAINABLE PATTERNS TO A GREEN FUTURE

Today, the ongoing development patterns of the Great Lakes continue to fragment or destroy the larger regional ecologies. The results are ranging from a continuing loss of wetlands and habitat as cities sprawl at low density, to polluted storm water runoffs, and to a persistency of engineered and piped rivers and streams. Furthermore, we observe a loss of forests and of the urban tree canopy. Older neighborhoods are suffering from disinvestment.

Our global population is growing while natural areas are declining. In the Great Lakes region, the population, with a few exceptions such as Toronto and Chicago, is diminishing, while migration into cities is unprecedented in the sunbelts, along the ocean coastlines and areas that seem to be in the path of hurricanes and sea surge.

URBAN DEVELOPMENT CONTINUES TO FRAGMENT AND DESTROY NATURAL SYSTEMS

Our Great Lakes cities are located in one of the most resilient portions of the continent, having great resources of fresh water. Still, we have shaped these cities with 20th century technologies: the automobile has created a mostly impervious ground plane making cities highly vulnerable. Today we can do better.

What we need are new ideas for our cities that:

1. build stronger economies, introduce new industries and more sustainable growth patterns,
2. bring social, ethnic and economic groups together as vibrant communities,
3. restore and integrate nature and natural systems throughout our urbanized regions,
4. use advanced technologies to better our mobility, energy and health systems,
5. anticipate a changing climate in how we design and develop,
6. explore ways to bring nature onto an equal footing with urban development.

This article focuses on Point #6 Urbanism and Nature or “Re-Wilding”, where nature becomes

equal in importance to city building, and our environment guides development rather than development compromising our environment.

RETHINKING THE CITY AS A SPONGE...

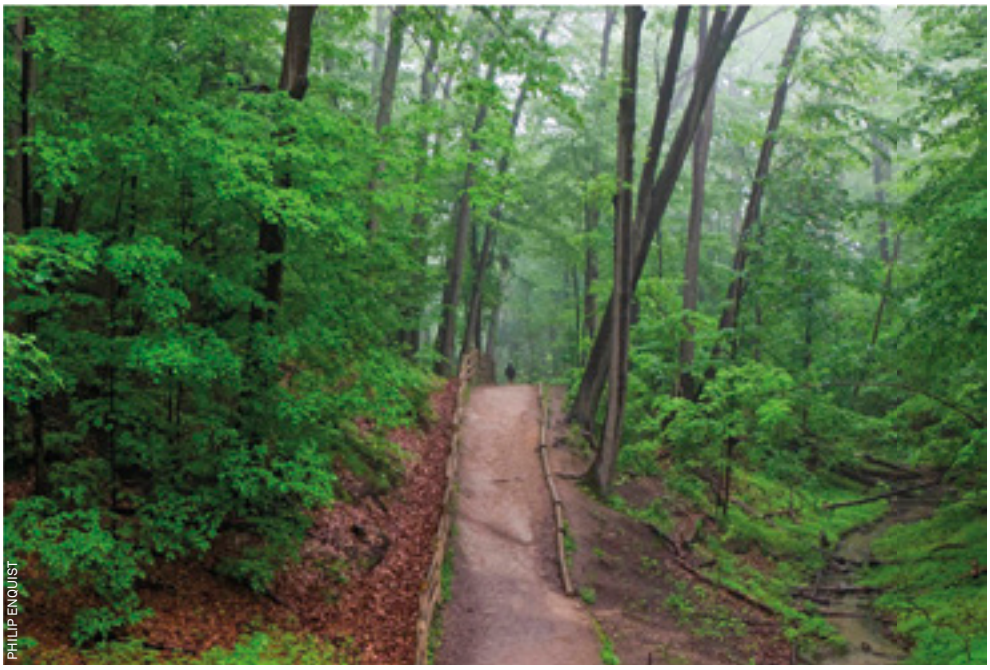
Urban streets can make up 40 to 50% of total land area in central cities, especially the pre-WWII industrial cities of the Great Lakes, including Detroit, Erie, Buffalo and Chicago. With mobility shifting, driverless, self-organizing, and on demand service, the need for the storage of cars should be dramatically reduced. Eliminating parking lanes and surface parking lots is an opportunity for nature to come back into cities. With the narrowing of streets and reduction of parking space, almost half of existing paved area could go to natural systems, for shade, comfort, better water systems and health. This can go along with the realization of green infrastructure which costs a fraction of standard engineered infrastructure and an emphasis on building on compact, walkable scales and the maximization of areas that are in naturalized landscapes. In addition, with the loss of heavy industry and introduction of high technology, our industrialized, steel-lined rivers can return to soft banks and restored wetlands and our aesthetic of a lawn-based landscape can also shift to one of native plants.

THE TREE IN THE CITY

Even if trees are one of the Earth's largest banks for storing carbon, the US Forest Service estimates that American cities lose millions of trees per year - between 2009 and 2014, 70,800 hectares of tree cover was lost annually in US urban areas. Impervious surfaces increased by almost the same amount as tree cover loss. Worldwide we lose 7.7 million hectares of forest per year. How do we leverage and respect our very affordable 'arboreal infrastructure' in urban areas? We need to take into account the significant benefits of trees: as they absorb carbon dioxide, mitigating heat islands' they also scrub the air and water and provide habitat. Furthermore they increase liveability, promote walking, health and happiness, and create unique urban identities.

COURTESY SOM © TOM HARRIS | HEDRICH BLESSING

100-year vision of the Great Lakes. Exhibition organized by SOM with the International Secretariat for Water and the Chicago Architecture Foundation.


PHILIP ENQUIST

After many decades of urban sprawl, Toronto now preserves it's green corridors as urban forests (The Ravines).

In 2017, i-Tree, a computer software analysis, concluded that cities with populations of over 10 million (the mega cities) would each make annual savings of $500 million from reduced air pollution and mitigated heat island effects through trees.

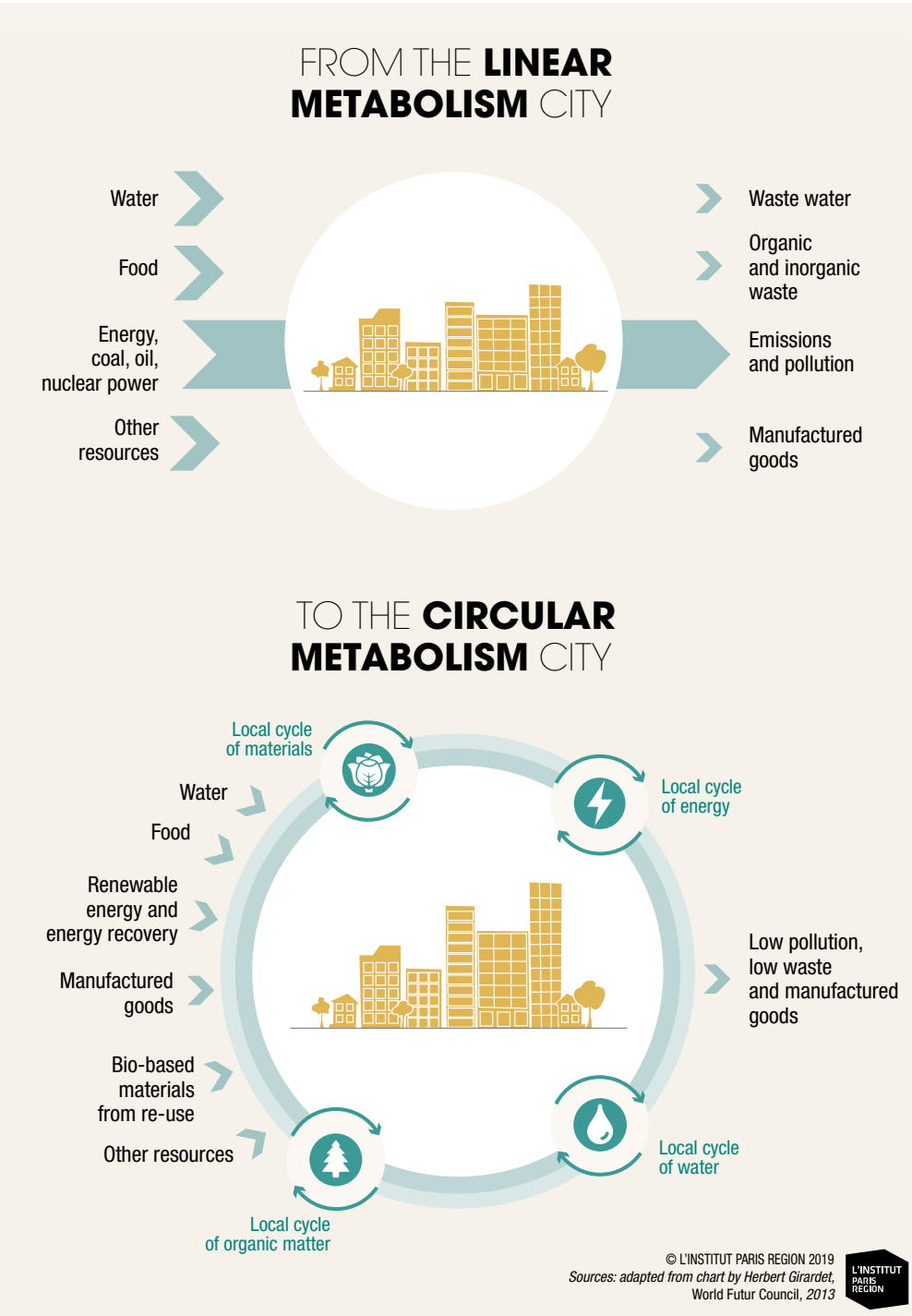
CRITICAL ACTION

This is a critical conversation that needs to happen at all levels of government from small communities to states and provinces. After ongoing storm and hurricane threats in Southeast Asia and the United States, the intense droughts and fires we are seeing in the west, and the heat waves across North Africa and Europe, it is time to act differently.

The way we are building cities is simply not sustainable. We have fragmented our landscapes to the point that they are vulnerable to increased weather patterns. The simple application of nature coming back into cities points us toward higher resiliency against intense weather crises. The health of the whole planet and the earth systems of atmosphere, oceans, and land, have to come first. Planetary health is tied closely to urban health. By recognizing that cities must partner with natural systems, giving nature the room it needs, Great Lakes cities could lead as an example to the world. ■

THREE EXAMPLES OF 'REWILDING'

- **Robbins, a Chicago suburban community, is solving its increased flooding issues by introducing an extensive wetland park system that connects elementary schools together and provides new recreational amenities. Removing pipes and widening streams into healthy wetlands appeared to be an affordable solution to prevent flooding in major storms, keeping the downtown of Robbins and over 200 homes dry.**
- **Chicago's Metropolitan Water Reclamation District, along with many municipalities within the Chicago region, is working with us on a strategy of solving flooding one community at a time. By restoring the natural wetlands that have been lost over the last century, increasing community park systems designed for storm-water retention, and reestablishing forested landscapes, communities are becoming more resilient. Much of this current work on the scale of communities has come from the larger study of the Great Lakes ecosystems.**
- **Non-profit organizations are also contributing greatly to the re-wilding of our regions: The Wetlands Initiative is focused on the restoration of Monarch Butterfly habitat whose population has declined by 80%, the reduction of nutrient pollution in agricultural runoff through constructed wetlands, the restoration of Oak Savannahs, and the restoration of the historic marsh lands. ■**


FROM THE LINEAR METABOLISM CITY
Water
Food
Energy, coal, oil, nuclear power
Other resources
Waste water
Organic and inorganic waste
Emissions and pollution
Manufactured goods
TO THE CIRCULAR METABOLISM CITY
Local cycle of materials
Water
Food
Renewable energy and energy recovery
Manufactured goods
Bio-based materials from re-use
Other resources
Local cycle of organic matter
Local cycle of energy
Low pollution, low waste and manufactured goods
Local cycle of water
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Sources: adapted from chart by Herbert Girardet, World Futur Council, 2013
L'INSTITUT PARIS REGION

THE **REGENERATIVE CITY**: A NEW CONCEPT

Although the efforts of the new ecological and resilient agenda of cities are bearing fruit, they are still insufficient. If actions consist of the reduction of our impact, the overall result is still negative. Can urban planning act as a key in the transformation from the concept of a "sustainable region" towards an urban ecosystem? At which scales are interventions most efficient?

****

Peter Newman, Professor of Sustainability, Curtin University, Australia

Cities compete in a global economy and need to constantly prepare for the next economy or they start to miss out. They can lose the edge that brings young people and new jobs. Paris is showing how to plan for a carbon neutral future, Freiburg for the sustainable city, New York has pushed the smart, resilient city agenda. Tokyo leads in public transport and walkable centres, Melbourne in liveability, Singapore in biophilic urbanism...

REGENERATIVE CITIES

The idea that has not yet caught on in the same way is the 'Regenerative City'. Many of the above theories or paradigms are trying to show how cities can reduce their environmental footprint whilst continuing the historic role of cities to create social and economic opportunities. However, the Regenerative City goes beyond this to suggest cities need to regenerate their environment whilst increasing social and economic opportunities. This is all together a local, regional and global environmental regeneration.

The Regenerative City, instead of reducing carbon emissions, needs to be sucking carbon out of the atmosphere; instead of reducing impact on biodiversity it should be creating new habitats that increase ecological opportunities; instead of consuming less phosphorus and nitrogen it should be extracting these excess nutrients from sewage, rivers, lakes and groundwater so they can be returned to agriculture. The same idea can be applied to any major environmental issue and is in particular being suggested as a way to demonstrate how cities can be much better and safer options than other solutions at 'geoengineering' the atmosphere (i.e. large-scale interventions on the climate systems). The metabolism of the city is thus significantly altered in a Regenerative City. Instead of reducing the flow of resources into wastes, the Regenerative City creates resources out of wastes in a circular economy, powered by the sun, just as ecosystems do. There are small examples that are starting to be expressed as regenerative projects but the opportunity to push this agenda is still largely symbolic. Each of the cities expressed above are moving down this path. For example, Singapore is showing increased biodiversity in its city as new habitats are created in the forest-like structures of green walls and green roofs. Paris's carbon neutral strategy can be used to create a bioregion with significant carbon capture in forests, agricultural soils from recycled compost, and tree farms for urban buildings that sequester carbon for hundreds of years. Freiburg can expand its extensive solar system to be exporting more

renewable energy than it is consuming. Tokyo's fringes are shrinking, so the city can demonstrate how regeneration of more central urban areas help the contraction of its urban footprint. New York can add to its smart technology for energy, water and waste and begin regenerating its bioregion. And Melbourne can continue its liveability growth while adopting much more stringent environmental goals. So, how would any city begin the journey to being regenerative? In my own city of Perth we are learning how to start small and scale up using urban research projects in partnership with developers, local governments and utilities. We are also learning that different parts of the city are very different in their urban fabric and thus in their opportunities to be regenerative.

URBAN FABRICS AND REGENERATIVE OPPORTUNITIES

The different areas of the city are obviously going to have different approaches as cities begin scaling up towards being regenerative. The "Theory of Urban Fabrics" enables us to understand how different parts of the city were formed and should be respected as they move into a new future. For example: A roof-top solar is best at an individual household scale in suburban areas. Here, a lot more attention is needed on shared transport systems than in walkable, dense cities, which can switch much easier to zero carbon transport (walking cycling and transit). In these denser areas however more community-scaled renewable energy options will be needed. ■

FURTHER READING

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"URBAN FABRICS AND URBAN METABOLISM : FROM SUSTAINABLE TO REGENERATIVE CITIES" ***IN RESOURCES, CONSERVATION AND RECYCLING*****, 132**
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AUSTRALIA NATIONAL RESEARCH AND INNOVATION HUB FOR THE BUILT ENVIRONMENT:
lowcarbonlivingcrc.com.au

Upscaling local initiatives: the Perth experience

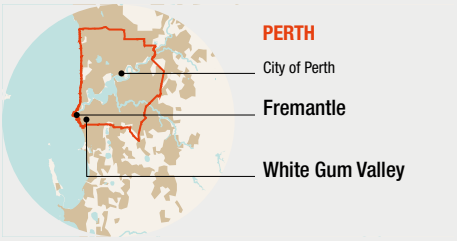
Josh's House. This project is about transforming a simple, typical, Australian house lived in by a family of four into a carbon positive building. Thanks to 70 channels of monitoring, openly accessible on internet, it provides a wealth of information on how to build a house in a new, net carbon positive way. Josh's House is regenerative in carbon and recycles its water. Its power and water systems have been used in the scaled up projects below that are enabling the research team to examine the opportunities provided by shared infrastructure. (www.joshshouse.com.au).

Net Zero Energy Homes. The second step consisted of a national project that worked with developers who build project homes. They are designed as Net Zero Energy Homes (ZEH) using efficient heat pump hot water systems and reverse cycle air conditioning, combined with photovoltaic systems. A new voluntary adoption of the zero carbon outcome suggests there is now a market opportunity to go further into regenerative territory.

White Gum Valley. This leads to the redevelopment of the White Gum Valley (WGV) neighbourhood in Fremantle, a suburb of Perth. This commercially successful residential precinct of 100 housing units was designed to be at least Net Zero Energy or even Carbon Positive. It is a combination of energy efficient design and renewable energy, enabled through design guidelines and sustainability incentives and includes multiple housing options, such as social housing for artists, housing for young people, etc. Planning objectives went beyond the

building by taking into account retention, planting of trees, re-purposing a storm water sump into open space and community ground water bore for all irrigation. Along with diverse community engagement, this led to rapid sales and enabled the developers and state government to declare it a financial success. The Peer-to-Peer Trading system using block chain is a world first. Early data suggests it is carbon positive. The project shows how scaling up provided new ways of sharing solar energy and water as well as a small shared electric vehicle project.

One Thousand Homes. In order to extend WGV innovations into a much larger scale that provides more options for urban sharing, another project consists of 1000 housing units of re-developable land. It includes a range of innovations such as community batteries, water sensitive urban design, and a potential Trackless Tram transit system linking to the city centre in Fremantle. A shared community governance that enables new distributed energy, water and transport systems is also included.



Smart City Renew Nexus. Finally, this project scales up to a whole local community of 25,000 people. It has begun to monitor and model how a renewable power and water system at community scale can use Peer-to-Peer trading managed through block chain. Homes throughout the City of Fremantle have been fitted out with monitoring systems, enabling the system to be constantly optimized. New electricity and water tariffs will be suggested based on the results. This is a partnership with the utilities who have learned from the smaller scale projects, not just because they are successful and economically attractive but because they provide insight into a new business model that manages distributed power and water systems. ■

ZSTOCKPHOTOS/ISTOCKPHOTO.COM

Australian cities, high consumers of fossil fuels, are now switching to solar energy, Perth.

ENVIRONMENTAL DESIGN FOR URBAN INTENSIFICATION

World demographic prospects suggest that cities need to grow more compact. But are dense cities really liveable and sustainable? Negative externalities to urban intensification need to be examined with care in order to find adapted solutions. Environmental Design instruments can play a crucial role in this perspective, as Hong Kong shows[1].

****

Jianxiang Huang, Mengdi Guo, Anqi Zhang et **Tongping Hao**
Sustainable High Density Cities Lab (SHDC Lab), University of Hong Kong

Despite the fact that Hong Kong is top-ranked in economic competitiveness, life expectancy, and in its public transit system, the Asian world-city suffers from environmental risks, such as stagnant air, noise and urban heat resulting from its high building density, representing a persistent threat to quality of life and health of the urban population. Thus, the City-State operates a system of environmental urban design control with the goal of protecting "public goods" (air, views, etc.) with scientific precision. Design innovations are experimented in public-funded pilot projects and experiences spill over to the private sector and the community.

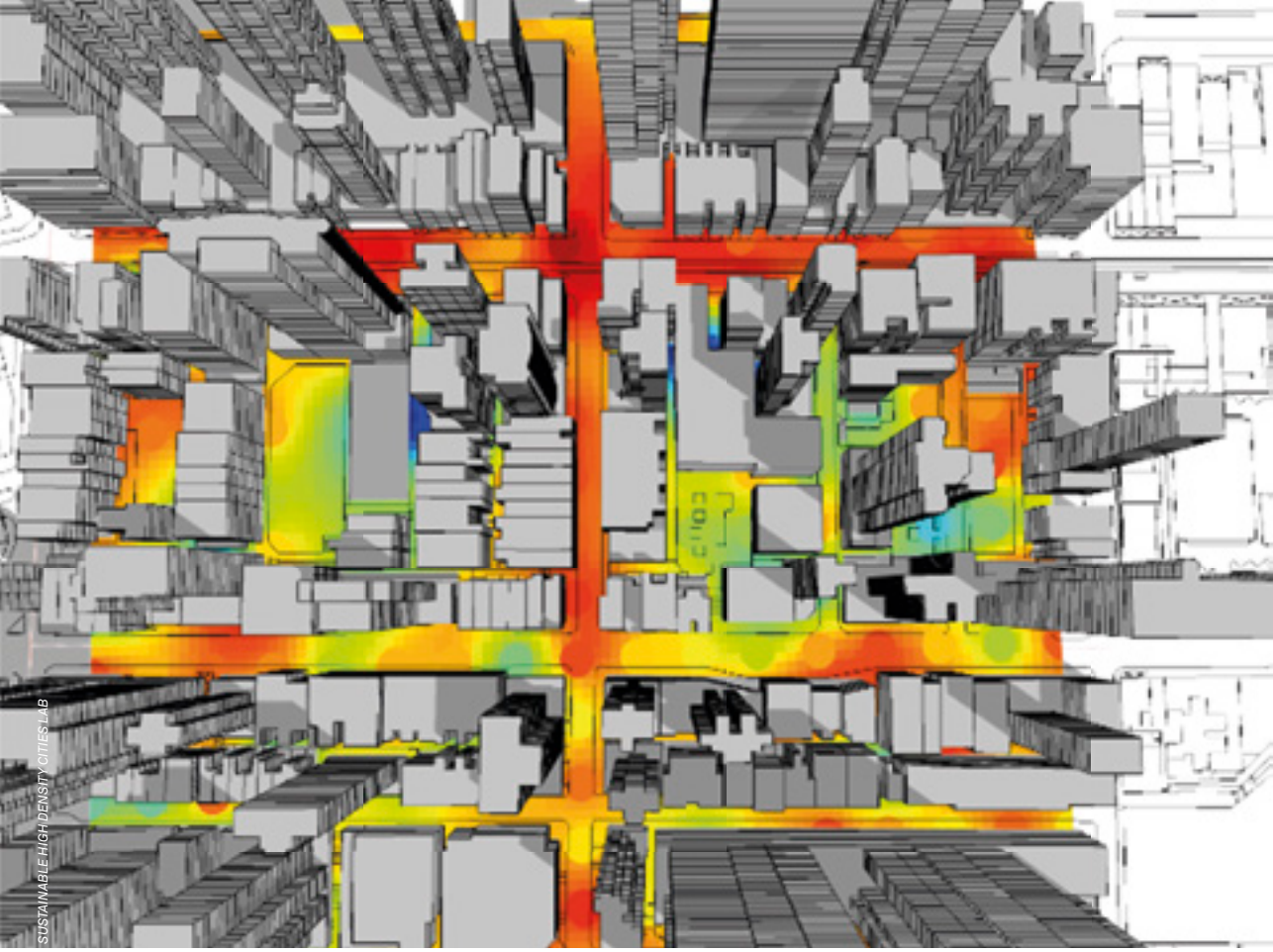
REGULATING ENVIRONMENTAL URBAN DESIGN: INSTRUMENTS

A combination of regulations, incentive schemes, and voluntary guidelines accounts for the regulation of Hong Kong's environmental Urban Design. The *Air Ventilation Assessment* is a regulatory procedure for major (re)development projects in order to enhance air ventilation at pedestrian level. Using a wind tunnel test or computer simulation, a design scheme needs to prove that it does not obstruct pedestrian-level wind in the neighborhoods. The procedure has become mandatory for major public-funded projects and intends to influence all future planning.

The *Sustainable Building Design Guidelines* (SBD) promote key features such as building separation, building setback and on-site green coverage in order to enhance air ventilation and mitigate urban heat island effect. Compliance to SBD is awarded with a bonus in Gross Floor Area as an incentive. It combines with the Hong Kong *BEAM Plus Assessment* Certification.

The *Guidebook on Urban Microclimate Study* aims to provide professionals with knowledge and inspiration about urban microclimate. The *Urban Design Guidelines* promote public awareness on the shaping of the physical environment in aesthetic and functional terms, at different scales.

In general, technologies such as computer simulation are used in early stage design, when revisions are less costly. It helps decision-makers to compare impacts of various design options and identify potential problem areas. But they are also adopted to underpin performance-based



Simulation of traffic noise in the *Sai Yinging Pun* district, Hong Kong.

standards and to visualize technical results for the general public. Simulation software such as *CityComfort+* developed by the *Sustainable High Density Cities Lab* can assess pedestrian thermal comfort and various microclimate attributes at fine spatial and temporal resolution. Non-technical users can test the performance of various design options.

HONG KONG, A LABORATORY FOR DENSE CITIES

Hong Kong's achievements are inextricably linked to its system of environmental urban design, spearheaded by the public sector in design innovation; experience trickles down to the private sector and the community. New technologies and sensors enable design practitioners to achieve goals with scientific precision. Hong Kong is a living laboratory for other dense cities and its lessons and experiences offer confidence that a high-rise high-density urban environment, if properly designed, may offer a viable solution for 'good' density. ■

www

FURTHER READING

BRINGING GREEN AND HEALTHY LIVING TO HARMONIOUS COMMUNITIES THE HONG KONG HOUSING AUTHORITY'S EXPERIENCE
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1. This article is a significently shortened version by L'Institut Paris Region of the original draft article received August 2018.

PAUL LECROART/L'INSTITUT PARIS REGION – STREET ART GALLERY IN VENICE BEACH, LOS ANGELES.

FROM CAR-ORIENTED CITY **TO HUMAN-CENTRED CITY-REGION**?

From the mid-twentieth century onwards, the "car-oriented city" model was superimposed onto the nineteenth-century railway city and the pedestrian city of previous centuries, prompting urban sprawl and making cities dependent on fossil fuels. Today, are we trying to develop compact cities, car-lite cities and even car-free living. But what about suburban areas? And what about the expected arrival of robots in our streets? Will the future of our cities be human?

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Paul Lecroart, Senior Urbanist, L'Institut Paris Region

Although the model of the city organised around its roads retains its allure in emerging megacities, it has been challenged since the late twentieth century in developed cities. Many cities are seeking to end their dependence on cars via planning and mobility policies that are more or less integrated on different scales. Thus we find:

- National legislations banning the construction of suburban shopping centres (UK, Netherlands, German *Länder*);
- Long-term planning that seeks to protect natural areas to encourage compact urban development (Amsterdam, Copenhagen, Portland, Hong Kong, Seoul, Singapore);
- Massive investment in transport infrastructure, coupled with the urban development of new metro corridors (Madrid, Copenhagen, Vancouver), tramway lines (Stockholm, Los Angeles, Sydney) or express bus lanes (Bogotá, Rio, Istanbul, Seoul);
- Policies fostering density and mixed use in post-industrial cities (Paris, Milan, Hamburg, Stockholm), sometimes with tall building development (London, Vancouver, São Paulo, Shanghai);
- Overall walkability strategies[1] (Madrid, Munich, Copenhagen), initiatives stimulated by temporary experimentation (Bogotá, San Francisco, New York) or highly symbolic transformations (Paris, Seoul, Buenos Aires).

These policies have met with some success in city centres, but they have rarely affected suburban areas, increasing the risk of two-speed cities. In the last decade, the idea of the street as a medium for urban wellbeing has emerged (e.g. *Healthy Streets* in London). The *Global Street Design Guide*[2], signed by city mayors from all continents, suggests giving priority to social needs rather than traffic when streets are designed.

In North America (San Francisco, New York, Portland, Montreal, Vancouver), in Europe (Birmingham, Lyon, Liège, Utrecht, Helsinki) and in Asia (Seoul), cities are converting urban freeways into more peaceful boulevards and park corridors, with positive effects in terms of traffic, urban regeneration and the environment. Some twenty metropolitan regions worldwide, including Paris, are considering transforming highways into urban boulevards[3].

HIGHWAY TRANSFORMATION IS A SIGN THAT CITIES ARE MOVING AWAY FROM THE CAR

REGIONAL CYCLING INITIATIVES

Over the past ten years, biking has emerged as a major transport mode. In the early 2010s, 23 towns in the capital region of Copenhagen began to create an express cycle network as an alternative to cars (and trains) on sections 5 to 30km long[4]. Some of the 170 km of express bike lanes have been built, and some stretches are used by up to 40,000 people a day (more than many roads)! By 2045, 746km should be completed, at a cost of 295 million euros, bringing a profit of 765 million to local authorities (including public health benefits). This strategy has been copied in London (*Transport for London* has an annual bike budget of 190 million euros), elsewhere in Europe, in the Americas, in Australia, and in China. The new bike culture produces some spectacular architecture (*Snake Bridge* in Copenhagen, *Skyway* in Xiamen, *Tilikum Bridge* in Portland), but the challenge is above all to create a comfortable, safe and continuous network across all areas. This is the Achilles heel in the Paris Region. The Region has just adopted a new Bike Plan that aims to treble bike journeys by 2021, with funding of 100 million euros.

Bike parking is starting to be taken seriously: in the Tokyo region, automatic silos for 10,000 bikes are not uncommon; Utrecht station has a bike park that will eventually accommodate 22,000 bikes—a reference for the future stations of the Grand Paris Express metro. These facilities are combined with "bike-centred planning" integrated into the development of urban districts (*Sluisburg* in Amsterdam). Bikes call for modest investment and boost the perceived value of areas that are hard to get to by car and, when combined with trains, of suburban and rural areas. One study[5]

shows that in Europe, every kilometre covered by car costs local authorities 0.11 €/km, while cycling and walking generate profits of 0.18 €/km and 0,37 €/km respectively.

CAR-FREE CITIES?

More and more cities are preparing for a future less dominated by cars, encouraging car-sharing and reducing the number of available parking spaces. London is planning a massive transition to alternative means of transport to lighten the load on its roads: each urban development will have to contribute to the objective of the new *London Plan* to increase the proportion of journeys on foot, by bike and by public transport to 80% by 2041 (compared to 63% in 2017). In Inner London, which is 3 times larger than Paris City, all new property developments should be car-free (without parking). In New York, the Regional Plan states that, by 2040, only 20% of streets should be used by cars (compared to 57% today) and 10% for parking (25% today). Singapore aims to ensure that 75% of rush-hour journeys will be made by public transport by 2030 (66 % in 2014), and that 80% of homes will be less than 10 minutes from a station.

Singapore was the first city to install an urban toll system to halt the growth of car traffic in the centre and on certain major roads. It will soon be replacing the toll barriers by a fairer GPS system based on distance travelled. Other cities have adopted tolls for access to the city centre, combined with extensive low-emission zones, such as London (since 2003), Stockholm (since 2006) and Milan (since 2011). In Oslo, Bergen and Trondheim, these tolls form part of a "mobility package" that funds roads, public transport, cycle lanes and pedestrian improvements. New York is following suit after 20 years of debate: the state will set up a toll for vehicles entering the south of Manhattan to reduce congestion and generate a billion dollars annually, which will be invested in public transport.

The congestion charge is very useful for reducing traffic (by 10 to 30%) and pollution, and is popular wherever it has been set up. In France tolls are seen as unfair from a social and regional standpoint, but while traffic jams penalise users and society at large indiscriminately, congestion charges can foster modes of use that are more socially useful to the community and prioritise trips without attractive alternatives (while raising funds for public transport).

In response to urbanites' aspirations towards a "liveable" city, an increasing number of experiments are being carried out with the car-free city in mind: in many neighbourhoods in Stockholm, Malmö and Copenhagen, parking is no longer allowed on the street: instead there are multi-storey mobility centres whose roofs serve as public squares or school playgrounds. With its *Car-Free Livability* programme, Oslo intends to free the city centre of cars, as in some Italian cities. In Bremen and Hamburg, residents subscribe to car-sharing programmes, which frees up courtyards to be used as gardens. Helsinki plans to make private car ownership obsolete by 2025 by providing generalised access to an on-demand multi-modal mobility service.

WALKABLE SUBURBAN AREAS

Since the early 2000s, these strategies, combined with societal and technological changes, have helped to restrict the presence, use and ownership of cars in the central areas of developed cities. They have made them more lively, often more liveable...and less affordable. But these methods have turned out to be powerless to change the lives of suburbanites who still have to use cars and whose lifestyle is financially and ecologically unsustainable. One of the major challenges, especially in the Paris Region, is to make suburban areas walkable, cyclable, dense and lively, and to invent a form of local planning centred around hubs offering rapid access to metropolitan jobs and services by train, express bus services, car-sharing programmes, or on-demand public transport[6].

ROBOTS IN OUR STREETS

With air pollution, congested road networks are a typical problem in attractive and poorly regulated metropolitan areas. For the moment the explosion of digital use (with Uber, Amazon,

Car-free environment. Shift of road hierarchy in favour of qualitative public life in Barcelona's *superblocks* (San Antoni district).

AirBnB, etc.) has worsened congestion, while contributing to the artificialisation of farmland with warehouses and global warming with data centres. What does the future hold? What will the impacts of the digital revolution on our cities be? One disruptive factor will be the driverless car. Digital majors and car manufacturers highlight the potential of its use in cities: less traffic, less congestion, less pollution and accidents, conversion of car parks, unsealing roads to cool down the city, easier access to healthcare, etc. While the legal, safety-related and ethical aspects are under debate, the risks for urban living remain relatively unexplored: who will decide on the algorithms that will regulate the cohabitation between robot vehicles, non-driverless cars and humans? Will councils and citizens have any sway over giant multinationals? Will urban space be subject to the "requirements" of machines? Will cities be dehumanised, and will humans lose control of their environment?

In the past, promises based on technological visions have not been kept. Channelling rivers and burying polluted watercourses have reduced neither flooding nor water pollution. Cars didn't save cities by allowing city-dwellers to live in the countryside, as many experts in the twentieth century in the United States believed they would: in fact, cars almost killed cities! And building more roads and motorways has not solved congestion: quite the contrary, in fact.

These subjects merit careful thought and debate if we want to invent a human-centered urban future. ■

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Olympic Park, now Queen Elisabeth Park, London.

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OLYMPIC GAMES AS A STOPOVER, NOT A DESTINATION

London's bid for the 2012 Olympic and Paralympic Games was made possible by the election of a Mayor for London in 2000. Greater London finally had a single leader who could submit a bid on behalf of 33 boroughs. But what are the conditions for a successful legacy of the Games? A look back at the London experience.

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Richard Brown, Research Director at Centre for London
Previous Head of Olympic Projects at the Greater London Authority (GLA)

Elected Mayor of London in 2000, Ken Livingstone supported the city's bid for the 2012 Olympics Games. Sceptical about the positive impact of the Olympics, he was soon persuaded the bid could be about more than sport. Livingstone said he would support a bid if it could focus on the area around Stratford – an industrial area within sight of the financial centres of the City and Canary Wharf, but also one of the poorest places in England – and deliver the investment that was needed. So, from the outset, the Games were a stopover, not a final destination.

Livingstone made a deal with Tony Blair's Government in 2004 to fund the bid, and commissioned masterplans showing how the site could accommodate a compact Olympic precinct (an important preference for the International Olympic Committee (IOC)), and how it would be transformed afterwards. Each venue would either be temporary, or have a defined permanent use, and the remaining plots of land would be given over for housing. The Bid Company set up by Livingstone and the Government promoted these plans, alongside an image of London as an open global capital, where 300 languages were spoken, and every team would find support, to the IOC.

When London won in 2005, initial works were commissioned within weeks, but it soon became clear that the £2.4 billion budget agreed during the bid was insufficient; it had underestimated costs, and over-estimated the extent to which private financing could be secured. The Olympic Board – comprising Government, the Mayor, the Organising Committee and the British Olympic Association – reviewed the budget, and agreed a revised budget of £9.3 billion, including significant contingency funding.

Time was tight, so we established contract structures based on open-book pricing, and shared incentives for delivery on time and to budget. Three projects had problems: the plan was that the press and broadcast centre, and the athletes' village, would be funded by a private developer, then leased to the Organising Committee during the games. But when the financial crisis hit in 2007-08, the projects had to be funded and delivered by the public sector instead. And the discussion of

a legacy for the Olympic Stadium, with a football team part-funding construction, ran out of time – so the stadium was designed with a legacy as a 25,000 seat athletics stadium (a firm commitment made to the IOC by Sebastian Coe, the Bid Company and Organising Committee chair).

By 2008, construction was underway and the new Mayor Boris Johnson started planning for a legacy agency to deliver the next phase. The London Legacy Development Corporation was set up in early 2012, and took over conversion of the Olympic Park and venues in September 2012, alongside programmes to enable local people and businesses to benefit from economic growth on the site. The momentum of the Olympic construction programme was maintained by making firm commitments to re-opening parts of the Park one year after the end of the Paralympics.

At the same time, Johnson was responding to the success of the Games and the transformed perceptions of the Olympic neighbourhood of Stratford by pushing an enhanced ambition for the Park, with universities, dance studios and museums being established alongside the housing and retained sports venues. These plans, first named *Olympicopolis* by the classically-educated Johnson, and now re-branded by his successor Sadiq Khan as '*East Bank*', are expected to be completed by 2023, with the last housing units following a few years later.

London's strategies and structures were not perfect –far from it–, and there are decisions that could have been made differently in hindsight. But they benefitted from a long-term and shared vision, political resilience, and a clear-sighted attitude to cost, time and risk. The transformation of Stratford is underway, but the destination is still ahead of us. ■

CULTURE: A DRIVING FORCE FOR REGENERATION

Culture is a crucial dimension of urban redevelopment projects in metropolitan areas. Widely seen as a way to revive neighbourhoods suffering from deindustrialization, it has also become a major factor of attractiveness for executives and large companies, sometimes at the expense of accessible housing and workspace for artists as well as residents.

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Matthieu Prin, World Cities Culture Forum,
Carine Camors, Socio-Economist and **Odile Soulard**, Economist, L'Institut Paris Region

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The rise of the knowledge economy, the growth of cultural and urban tourism and the emergence of "creative industries", not to mention the new emphasis on culture as a means of attracting business: all these recent developments have led to a new focus on the place of culture in urban development. Culture is seen as stimulating long-term economic and social growth in cities by shaping a sense of place and social space that increases the city's attractiveness to an educated workforce and the businesses which seek to employ them.

Culture has been associated with urban regeneration since the 1990s, especially in post-industrial cities. Artists and cultural professionals, attracted by cheap rents and inner city living, are often among the first to move into neglected districts and turn urban "no go" areas into dynamic and fashionable places to live and work. A growing number of cities have instigated programs to attract creative businesses and cultural institutions to their deindustrialized neighbourhoods: strategy implemented with success by Buenos Aires for nearly 20 years.

ARTISTS ARE KEY-PLAYERS IN POST-INDUSTRIAL CITY REGENERATION

THE "THEMATIC DISTRICTS" PROGRAM OF BUENOS AIRES

Argentina's capital is an important cultural hub in Latin America and beyond. It boasts more theatres, bookshops and cultural spaces per capita than any other city in the world, besides numerous free events and festivals. The World Tango Festival & World Cup, the International Jazz Festival, the International Festival of Independent Cinema, and the International Book Fair attract hundreds of thousands of visitors every year. The government supports many training projects, incentives and competitions to encourage creativity, and sees arts policy as an important lever to promote greater social inclusion.

The cultural and creative industries are a significant contributor to the city economy, but they have tended to cluster in specific areas leaving some parts of the city underserved. In recent years, the city has developed a policy that both capitalizes on its creative talents and uses planning to regenerate low-income or under-developed city neighbourhoods. The 'thematic districts program' uses tax incentives and subsidies to attract certain businesses to particular areas of the city. The policy focuses on sectors where the city already has an advantage – sectors which provide high value-added jobs and are good exporters.

The program began in 2001 with the Design District in Barracas, an inner-city neighbourhood that vividly illustrates the bleak fate of former manufacturing neighbourhoods in a city undergoing deindustrialization: physical decay, degradation of its public infrastructures, disinvestment and the gradual impoverishment of its residents. A key objective of the project was urban revitalization and sustainability. At the heart of the project lay the conversion of a former fish market into a 14,500m^2 Metropolitan Design Centre. The Centre now houses government offices that promote design, business in the creative industries and foreign trade. It also has 70 workspaces for nurturing entrepreneurial ventures, an auditorium, classrooms, spaces for workshops, laboratories, exhibitions and displays, a specialist library, a museum and a cultural centre. It regularly opens its doors to the community with expos and international design fairs, and offers free training courses for the unemployed in trades such as sewing and leather work. This initiative helped Buenos Aires win the designation of World City of Design in 2005.

The District's impact on both the design industry and the regeneration of Barracas also convinced Buenos Aires that creative clusters are a successful formula for regeneration and growth. The city has instigated three more clusters since 2008, focused on the audio-visual sector, information technologies, and arts.

This last scheme, put in place in 2012, focuses on the visual and performing arts, as well as publishing. It intends to promote the art sector,

develop infrastructure and increase access to cultural activities using numerous subsidies to entice businesses to the area. The district now has many cultural attractions such as *Fundación Proa, Usina del Arte*, the Museum of Modern Art, the Museum of Contemporary Art, art schools and other cultural institutions. The *Usina del Arte* is a good example of culture-led regeneration. Located in the heart of La Boca in the south of the city, the new facility inhabits the former home of an electricity company. Along with several halls and theatres, the building houses the city's first Symphony Hall. In developing the project, the city's ministry of Culture collaborated with other departments to revitalize the wider area, making it safer and more accessible, and encouraging tourists to visit.

Although the four industry clusters have had important economic impacts, the social impact in these areas has been just as strong. The clusters have generated better infrastructure and public transport, greater access to culture and creative industries employment, the restoration of other buildings in the area as businesses move in and need premises, increased training in the arts and creative disciplines, and general improvements in the quality of public space and security.

The city government intends to continue its agenda of decentralizing culture by physically inserting it into areas of the city previously neglected, thereby increasing the quality of life and opportunities for disadvantaged communities.

METROPOLITAN CULTURAL PROJECTS

Hong Kong / Arts Space Scheme: creating more affordable artist studios

Hong Kong has one of the highest population densities in the world, and equally high property prices, meaning that there is a severe shortage of affordable studio space for artists. Launched by the Hong Kong Arts Development Council (HKADC) in 2014, ADC Artspace is the first arts space project put forward in Hong Kong. It is housed in a private former industrial building in an industrial zone in Hong Kong Island South that is now a burgeoning cluster of galleries and arts spaces. The project is collaborative, depending on an agreement with a private landlord willing to accept below-market rent.

Toronto / Evergreen Brick Works, using the arts to engage citizens in matters of environmental sustainability

Evergreen Brick Works turned an abandoned industrial site into a pioneering community facility that explores how nature makes cities more liveable. It includes a 40 acre park and 15 heritage industrial buildings. The Canadian federal government recently announced further funding for Evergreen to help support the transformation of one of the main buildings into a venue for cultural programming. The revitalised heritage building will include artist studios and meeting spaces, as well as enhanced public art installations.

Shenzhen / I-FACTORY, from industrial factory to creative factory

Shenzhen's rapid transformation into a megacity has meant a shortage of space for culture and the creative industries. I-FACTORY is a Cultural Creative Park in the port of She'kou that aims to become the birthplace of a new urban culture. It is housed in a reclaimed industrial heritage site, retaining massive concrete silos, chimneys and a machine hall. This unique historic building has become a public space. I-FACTORY is a pilot for the wider Industrial Design Port project which is revitalising former factories in the port area, and plays an important part of the development of the cultural and creative industries zone.

Seoul / Street Arts Creation Centre, Turning industrial heritage into a street arts centre

Seoul had a limited and regionally unbalanced cultural infrastructure, with a particular lack of workshops and rehearsal space for street arts. Artists in less popular genres face the most severe shortage of cultural infrastructure. Opened in 2015, the Seoul Street Arts Creation Center offers facilities, professional development and education programs for street arts

Metropolitan cultural project: Toronto, Evergreen Brick Works (top); Shenzhen, I-FACTORY (center left); Seoul, Street Arts Creation Center (center right) ; Buenos Aires, Metropolitan Design Center CMD (bottom).

and circus arts. It is housed a former Water Intake Station, preserving an important piece of industrial heritage. It is a project of the Seoul Metropolitan Government, with planning and operations delegated to the Seoul Foundation for Arts and Culture.

Vienna / F23.wir.fabriken, Developing cultural facilities in a new district

Vienna is growing rapidly – its population has increased by 11% in ten years. The outlying 23rd district of Vienna is the newest district in the city, created from 8 former villages. As a result it has no real centre. The space between the villages became an industrial area, but many factories have now shut down or relocated. The 23rd district lacks cultural facilities and needs to develop a community identity. F23 is taking a former factory and renovating it to become a cultural focal point for the district. In 18 months, over 40,000 people have already taken part in the temporary cultural projects hosted at the site. The project is an extremely collaborative one, involving IG F23 (a non-profit organization), multiple departments of the City of Vienna, municipal officials from the district where the centre is located, and various cultural projects and partners. So far, F23 has been very well received by the local community.

FORMER INDUSTRIAL SITES: AN OPPORTUNITY FOR CULTURE

Closed factories, disused hangars, empty warehouses... as world cities adapt to new economic realities, the long process of deindustrialisation leaves behind scores of empty buildings. Former industrial districts, facing the loss of traditional sources of employment and business, can easily descend into dereliction, with rising social problems for residents left behind - joblessness, poverty, delinquency... But these areas also provide local authorities with considerable opportunities for cultural activities, whether in terms of production or consumption. Since the 2000s, it has become commonplace for cities around the globe to turn former industrial sites into new arts and cultural facilities. As world cities need new, flexible forms of cultural infrastructure for the multimedia artworks of 21st century digital artists, repurposing empty factories and warehouses has become one of the most common strategies to host contemporary culture while preserving industrial heritage. The higher headroom, higher limit load and less restrictive physical layout of warehouse spaces also offer the most suitable "loft working" conditions for cultural and artistic production.

But the challenges for metropolitan areas remain numerous, a topic that is being analysed by the World Cities Culture Forum. Created in 2012, it includes today 38 member cities from all over the world, such as London, New York, Shanghai, Paris Region, Seoul, Sydney, Tokyo, Warsaw, etc. By bringing together their cultural expertise and knowledge, the participants have created a unique research and policy forum to address the role that culture plays in their cities, and to strengthen their policy responses to the challenges they face[1].

One of them is the growing shortage of space for cultural projects. Despite international recognition of their role in regenerating cities, the availability of large vacant industrial spaces for cultural production is increasingly threatened by global real estate market trends in metropolitan areas as landlords tend to convert warehouse spaces into more profitable residential uses. This erosion of industrial spaces, and thus of cultural production, has a severe impact on a city's overall capacity for innovation and its economic dynamism. A healthy experimental cultural and creative scene provides fertile ground for new ideas to filter into other communities and sectors of the economy. A lack of affordable workspace precludes cities from nurturing the new, the radical and the provocative, potentially creating an urban environment that stifles innovation. ■

1. The examples above are based on work carried out by the World Cities Culture Forum, of which L'Institut Paris Region is a founding member.

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20,000 inhabitants and up to 20,000 jobs are predicted for the new *Seestadt Aspern* district.

CITY **LIVEABILITY**: THE VIENNA MODEL

Vienna ranks as one of "the world's most liveable cities". It seems this has to do with a long-standing public investment in housing affordability and quality, public transport, education and health, as well as with competitiveness. This model has its limits and Vienna needs to innovate: the IBA 2022 may bring new social housing solutions for the city. But what about the metropolitan region?

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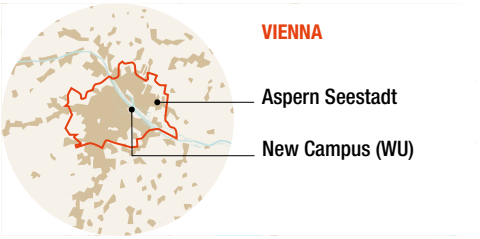
Eugen Antalovsky, Director, UIV-Urban Innovation Vienna GmbH

The fall of the Iron Curtain 1989 not only marks a geopolitical break of the highest importance and impact, it also positioned Vienna completely anew in Europe and opened the path for a new quality of development for Vienna. Today, after thirty years of increased population, Vienna is still a growing, dynamic and successful global city in Central and South Eastern Europe. That Mercer's "*Quality of Living Survey 2018*" ranks Vienna highest for quality of living in the world for the ninth year in a row is a result of this dynamic. This award acknowledges the professional and integrated management of the city and honours the development of creative, innovative and sustainable municipal policies and initiatives.

During the last three decades Vienna has been through different development stages: In the early 1990s Vienna evolved from a declining city at the periphery of Western Europe to a growing city in the heart of a renewed Europe, facing fundamental challenges in economic and urban development. After Austria's accession to the European Union in 1995, the city government took strategic decisions for long-term urban developments in this new environment. The issue of sustainability gained importance and the city carried out comprehensive actions for affordable housing and urban renewal. From 2005 on, Vienna coped with the challenges of a rapidly growing city and the implementation of large-scale projects to promote Vienna on an international level as a knowledge hub. Since 2010 Vienna's remit is about enhancing the international and economic competitiveness of the city and implementing a comprehensive smart city strategy. At the same time the city government and its citizens are faced with the challenge of a large influx of refugees and a shift in the political debate against the "*open city*".

PUBLIC INVESTMENT FOR QUALITY, AFFORDABILITY AND COMPETITIVENESS

This long-term development shows very well that citizens, immigrants, politicians and experts in business, science and administration have been jointly capable of turning a declining city into a vibrant, global and inclusive city. It also has much to do with the fact that Vienna has consequently pursued a high public investment model in public transport, affordable housing, renewable energy, education and health services of high standards for all. This engagement and responsibility of the public sector for social inclusiveness and affordable services of general interest allows citizens, investors, entrepreneurs and talents to develop their creativity and to live a life of high quality.

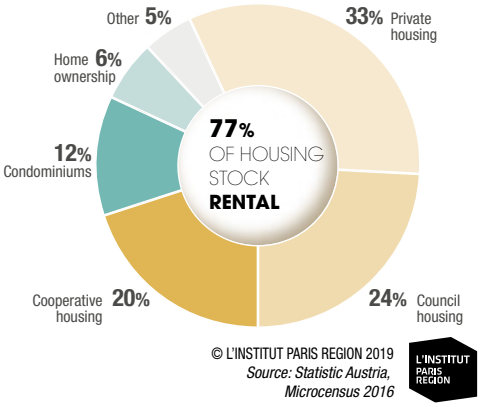


Vienna is well known for its comprehensive and diversified public transport system. With its Urban Development Plan 2025 and the Smart City Strategy 2050, Vienna has set ambitious goals for reaching a new level of sustainable urban mobility. Two outstanding projects exemplify how Vienna leverages through particular mobility measures, the impact for high quality of living: in 2012 the price of the annual ticket for public transport was reduced to €365. As a result, today more inhabitants own an annual ticket (760,000) than a car (693,000)[1]. Second, the development of the new large scale urban district Aspern Seestadt (on a former airfield) started with the construction of a new underground line which was finished before the first dwellings were offered to residents.

Vienna pays more and more attention to the science and research sector. As the biggest university city in German-speaking Europe with nearly 186,000 students, Vienna places emphasis on science and research as an important incubator for urban development and economic growth. The construction of the new campus of the Vienna University of Economics and Business (WU), seated in the recreational area "Wiener Prater" and finished in 2013, is an

important incubator for the transformation of a former "red light" and "workers district" into a new attractive research, business and housing district generating a lot of new investments in this area and beyond.
Vienna follows a holistic approach to new urban district developments, planning according to a set of interconnected principles which can be summarized in the claim: "A city that is good for children is good for everybody". In this regard green and open space for shared and fair use is at the heart of the shape of the urban environment – building from scratch makes it easier to fulfil this requirement, but it is also a principle for the already built city. High quality of urban environment also means planning new districts from the beginning with affordable and sufficient social infrastructure, such as kindergartens, schools and health care services.

TENURE STATUS
OF VIENNA'S HOUSING, 2016



CONTINUING SOCIAL HOUSING POLICY WITH HIGH STANDARDS

Affordable housing worldwide more is becoming an increasingly crucial factor of high urban quality of life and is a challenge for all growing cities. Since 2000 Vienna has grown by 300,000 people to 1.87 million inhabitants and will grow to 2 million in the next 10 years, and this means a challenge in the housing sector. Additionally, due to net immigration, Vienna is a highly diverse city – nearly 50% have a migration background and this multiplies the diversity of housing demands.

60% OF ALL VIENNESE HOUSEHOLDS LIVE IN SUBSIDISED HOUSING

To cope successfully with these two developments, the City of Vienna relies on a long-standing tradition of social and affordable housing policy. As a result, the City of Vienna owns about 220,000 flats which are rented out to low- and medium-income citizens. Furthermore, Vienna subsidises cooperative housing, provided mainly by limited-profit housing construction associations. Over the years the city of Vienna has subsidised the construction of around 200,000 cooperative dwelling units (these subsidies go directly to the housing associations, and tenants who want to rent in these dwellings have to stay within a defined income-limit).
It is Vienna's social policy concept to support low-income as well as medium-income citizens via municipal and cooperative housing to avoid segregation. As a result of this model, today about 60% of all Viennese households live in subsidised apartments and nearly 80% of newly built houses are publicly subsidised projects. Combined with a rental law, which foresees guide values and overall caps for rents in buildings constructed before 1945, the effect is that Viennese households spend on average a relatively low percentage of their consumption expenditures on rent operating costs: In 2010 around 14% of consumption expenditure per household went on rent and operating costs; but this increased to 17.3% in 2015[2] and reflects the growing pressure on the real estate market.
Public subsidies are a fundamental pillar of Vienna's housing policy. In the years 2010 to 2017, the City of Vienna spent between €300 and €500 million annually on new construction, and between €160 and €300 million on urban renewal measures and housing refurbishment. Additional individual housing allowances of

PAUL LECROART/L'INSTITUT PARIS REGION

The stock of 220,000 municipal apartments is regularly renovated according to current standards (building on the Drorygasse).

Vienna's new housing developments are mainly linked to qualitative public spaces (new Aspanggründe district).

around €50 million are given. For housing renovation and refurbishment about €5.5 billion of public money has been invested since 1984 – all these investments not only increase the number of affordable dwellings in the city, they also contribute substantially to preserving the housing stock for generations and have positive labour market effects.

The key operative player for realising the various housing programmes is the Vienna Land Procurement and Urban Renewal Fund (*wohnfonds_wien*). Founded in 1984, the fund provides land for state-subsidised housing construction and supervises the restoration of old houses. As a limited-profit organisation, *wohnfonds_wien* coordinates property developers, house owners, municipal departments and service centres of the municipality of Vienna. Well-directed purchase strategies of properties with development potential have cut the basic costs of the Viennese property market. To guarantee and improve highest quality of housing, *wohnfonds_wien* has implemented the so-called 'four-pillar-model', comprising architecture, ecology, economy and social sustainability. Following these cri-

PAUL LECROART/L'INSTITUT PARIS REGION

teria, every subsidised housing construction project is reviewed either by the Land Advisory Board or in a public property development competition.

THE FUTURE OF SOCIAL HOUSING – IBA VIENNA 2022

Affordable and social housing is mostly perceived as an exclusively public matter and remains in the realm of public responsibility. But this approach does not correspond well with decreasing public budgets and with the call for the retreat of the state from interventions in the property and housing market. Under the heading "*New social housing*", Vienna is preparing an International Building Exhibition (IBA) for 2022 to develop and test new forms, qualities and pilots of affordable and sustainable housing – smart housing, zero-energy housing, new financing models, etc. Discussions about new ways of enabling and unlocking private investment capital for social responsibility by building affordable, purpose-built rental housing, should be an issue of the IBA 2022 in Vienna. All of the exhibit's activities will be grouped around three core topics: New Social Neighbourhoods, New Social Qualities, and New Social Responsibility.

URBAN SPRAWL AND THE METROPOLITAN ISSUE

Due to the continuous growth of Vienna's population, affordable housing will remain a crucial issue in the future. But growth is not limited to Vienna: its suburbs are also growing, but still in quite a different way from the core city. Urban sprawl dominates with all its negative impact on land use and commuter traffic, space for new settlements is very limited and the challenges for the densification of the sprawl are much higher than in the city because of the very different expectations of inhabitants in the outskirts of the agglomeration.

Later than in other European cities, but with increasing pressure from problems as well as opportunities chances, a shift towards a thinking in terms of a "functional metropolitan area" is noticeable at political and planning level. How to develop urban density, smart mobility and affordable housing within the entire agglomeration and beyond all administrative boarders and types of spaces will become a major issue for Vienna and the suburban municipalities during the upcoming decade. ■

1. December 2016.
2. https://www.wien.gv.at/statistik/wirtschaft/konsum

Notkestrasse site, Hamburg.

DANIEL POSSELT/ZKF

PLANNING FOR **REFUGEES**

Integrating migrants is part of the DNA of large cities. With rising political instability and the climate crisis, cities may have to deal with the need for a better social and economic integration of growing refugee inflows. The experiences of major German and Swedish cities show that there are several ways to respond to this intention in the short and long run.

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Marie Baléo, Publishing manager, *La Fabrique de la Cité*

La Fabrique de la Cité is an urban innovation think tank that has, for several years, been exploring urban resilience: the ability of cities to resist and adapt to acute shock and chronic stress. In 2017 we launched a study focusing on the responses of European cities to the large-scale inflow of asylum-seekers from 2015[1] onwards. Our attention was drawn in particular to German and Swedish cities: the former had to deal with the German federal government's decision to host 890,000 people; and among the latter, Stockholm, whose public housing system was already experiencing a severe crisis, constitutes an interesting case study.

Hamburg, Munich and Stuttgart have in common a long tradition of welcoming migrants. This perhaps explains the way in which German cit-

ies have approached the challenge of emergency accommodation, then temporary housing: with the conviction that the new arrivals would stay in Germany, and with the commitment (particularly in Hamburg) that no asylum seeker would be left to sleep in the street.

To face the challenge of emergency accommodation, German and Swedish cities have adopted two strategies. The first involves using non-residential buildings: Berlin used gymnasiums, schools, former factories, exhibition centres and hangars at the old Tempelhof airport, which at the height of the crisis sheltered over 2,500 people. In Stockholm, former classrooms or retirement homes no longer able to accommodate the elderly because of regulatory changes were used to host asylum-seekers. The second strategy involves constructing cheap, light, standardised structures on vacant land often belonging to the municipality.

The first type of longer term temporary housing, where asylum-seekers have sometimes stayed for more than 18 months, is a form of temporary accommodation that is not intended ever to be permanent: highly standardised and of variable capacity, it is characterised by its short lifespan. This is the solution implemented in Hamburg on the Notkestrasse site, where flexible housing units, built in barely 8 months on land belonging to the federal state, housed 648 asylum-seekers in February 2017. Special attention was paid to community life and preparing residents for integration: ethnic and religious communities between which there is potential for conflict were separated, families were housed on the ground floor so that they could keep an eye on their children playing outside, teams of social workers were present every day, etc.

Another approach involves offering temporary housing within a permanent structure, in other words buildings that will eventually be added to the city's housing pool to accommodate other types of residents: students, the elderly, families, and so on. In Berlin, housing inspired by student halls of residence has been constructed, and will be used as social housing in the future. ■

THE THINK TANK *LA FABRIQUE DE LA CITÉ* AND THE ISSUE OF AFFORDABLE HOUSING

For 10 years La Fabrique de la Cité has brought together researchers, decision-makers, elected officials, planners, architects, entrepreneurs and investors to lay down the principles of a shared vision for tomorrow's city focusing on questions of mobility, the built environment, energy, digital technology and modes of use. We leverage collective intelligence in a multi-disciplinary and international perspective in order to suggest new ways of building and rebuilding cities.

The study on the subject of affordable housing is part of this approach. For several months we met with experts in Paris, London, Berlin, Munich, Stockholm, Bordeaux and Warsaw in order to understand the sources of the housing crisis in these cities. These conversations formed the basis of a report highlighting the many facets of the crisis: complex relationships between mobility and housing in Munich, the limitations of increased urban density in inner Paris, the failure of the public housing system in Stockholm, etc. This work was made public at a seminar organised in collaboration with Bordeaux Métropole where we invited key figures involved in European housing to help us draft an outline for a target-driven, innovative and partner-based approach that cities must adopt in order to deal with this major metropolitan challenge. ■

Cécile Maisonneuve, President of the think tank

FURTHER READING

EUROPEAN CITIES AND THE REFUGEE SITUATION
Baléo Marie, La Fabrique de la Cité, November 2018.

IN SEARCH OF AFFORDABLE HOUSING: A EUROPEAN CHALLENGE
Baléo Marie, La Fabrique de la Cité, January 2018.

www.lafabriquedelacite.com

GEO IMAGES/ALAMY STOCK PHOTO

PROSPECTS

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What will the world of cities look like in the future? Will they be able to work hand in hand to tackle geopolitical and climatic threats? With the support of international networks, cities are redefining their positions in the global arena and inventing new models of governance. New forms of civic participation are emerging. Private investors and digital giants are playing an increasing role in urban development. Cooperation between towns, cities, regions and states is being reinforced, in a variety of different configurations. What is the future of the Global City? Will the Paris Region assert a development model with its own special chemistry?

Tokyo Bay with its replica of the Statue of Liberty and its tower inspired by the Eiffel Tower.
PHOTO: LUCAS VALLECILLOS

A SMALL WORLD: GLOBALISATION, COOPERATION, TRANSITION

Cities are places where conflicts occur between economic, political and civic actors, who invent original governance models and structure their networks on a global scale. They have to strengthen these connections in order to keep their place in a world of social and technological innovation. Will they be able to act together in response to geopolitical and climate-related threats?

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Léo Fauconnet, Political Scientist and Urbanist, L'Institut Paris Region

As far back as 1963, Francesco Rosi's famous film *Hands Over the City* described the city as an arena for confrontations between property investors, inhabitants and local democracy. With metropolitanisation, such dramas are taking place against a new global backdrop.

The concept of "metropolitanisation" describes the role of large cities in international economic systems, focusing on the effects of this transformation on governance and the urban development of metropolitan areas. The globalisation, tertiarisation and financialisation of business has made them into strategic territories, thanks to their ability to group together services and skills and consolidate flows of people, information and capital. By the same token, these cities have naturally become places where players of the new economy establish themselves. This explains what Richard Florida calls the shift from the "crisis of decline" to the "crisis of success" in large cities[1]. Unattractive, poverty-stricken and bankrupt in the 1970s, they are now magnets for "metropolitan executives" and the "creative classes". Instead of suburban sprawl, we see an unprecedented concentration of investment in the hearts of large urban areas, with all the social and regional problems this brings in its wake: property speculation, rocketing housing costs, increased segregation (read article by Emmanuel Trouillard, p.152), etc.

GLOBALISATION IS INCREASINGLY PUTTING ITS MARK ON CITY FABRICS

PRIVATE STAKEHOLDERS IN THE CITY

The importance of private stakeholders in the financing of cities—whether it be for office buildings, institutional investment in housing, or creating private museums or shopping facilities, is nothing new, however. Dominique Lorrain has highlighted the privatisation of utilities and the increasingly widespread management of urban amenities by large firms as far back as the 1980s[2]. Ludovic Halbert has described the key role of financial markets in urban production, running counter to the traditional approach that relies on public decision-making[3]. Metropolitanisation leads to the global integration of urban development and to a kind of uniformity, with the circulation and standardisation of urban financing models by major globalised actors.

This process seems to be increasing. Where investments could once be guided by mainly local economic ecosystems, the question of a disconnection is now being raised. Are investments in London real estate still determined by local demand, including that of the international companies that move there, or do they mainly respond to the expectations of liquidities seeking to invest there (article by Martine Drozdz, p.157)? In other words, does the metropolitan real estate dynamic not increasingly resemble that of Dubai, dictated by external financial interests instead of a specific economic context and the needs of local residents?

The other major evolution comes from the emergence of new actors in urban management: digital platforms (interview with Isabelle Baraud-Serfaty and Renaud Le Goix, p. 162). Services are no longer decided upon and delegated by public authorities, but instead identified and defined by multinationals with technical and financial resources far greater than those of local authorities. Privatisation is extending not only into public space, but also, and above all, into user data.

COOPERATION ON ALL SCALES

In this context, the decision-making capacity of local elected governments, and thus the democratic reality of metropolitan contexts, is being challenged. Large cities have perceived the challenge posed by international private interests and have made this dimension into a resource. Metropolitan networks are places where best practices can be shared and models circulated. They can also be mobilised to act in local and global political contexts (article

EPA/ROBERT PUGLLA

Citizens gathering on the occasion of the Habitat III conference in Quito in 2016.

by Éric Huybrechts and Lola Davidson, p. 166). These networks now position large cities on geopolitical maps once reserved for nation states. This can be seen, for instance, in the United States, with the *We are still in* alliance of cities that oppose Donald Trump's withdrawal from the Paris agreement. It is also true in certain particularly advanced macro-regional contexts, as in the Baltic space where cities are working on a common vision (article by Douglas Gordon, p. 170).

But let us make no mistake: the recognition of the importance of urban environments in world affairs, enshrined by the signature of the New Urban Agenda ("Habitat III") under the aegis of the UN in 2016, also reminds us that states still retain control. Cities, which are not subject to international law, still do not bring their full weight to multilateral discussions.

The process of emancipation from national contexts is moreover a source of criticism and political conflict. This is shown by the geography of the Brexit vote, which reveals a fracture between cities that voted Remain and the rest of the UK. Even though certain rural areas in France and Europe remain prosperous, cities are seen as the big winners in the globalisation game: faced with suburban and rural areas in crisis, they now also have to develop cooperation on a regional scale. This is especially true in France, where the "*Gilets Jaunes*" movement is rooted in a long tradition of mistrust with respect to large cities. This particular sensibility towards the balance of urban and rural areas maybe explains why France is so very creative in terms of regional governance and inter-regional cooperation: interSCoT (a regional coherence scheme), urban-rural reciprocity contracts, metropolitan hubs, state/city pacts, etc[4].

Advanced experiences in the field of metropolitan governance can be observed in Canada (Montreal), Mexico (Guadalajara) and Norway (Oslo). And very interesting initiatives are being carried out in the context of "new regionalism" in Italy, with the metropolitan region of Bologna,

Lagos in the 22nd century, imagined by the artist and designer Olalekan Jeyifous.

and in Germany, where the *Metropolregionen* connect local authorities with economic actors within large-scale, flexible organisations.

DEMOCRATIC INNOVATIONS

In many contexts, regional governments provide responses to this search for solidarity between metropolitanised areas and urban or rural peripheries as part of the transition process. Conversely, a number of regions are looking for more local solutions. How could it be otherwise when mega-cities with populations of several tens of millions are now a reality? The major federalist states of Latin America, in particular, are seeking to reinforce decentralisation in their capital cities. For example in the new *Ciudad de Mexico,* the democratisation of metropolitan government (now disconnected from the power of the federal state) goes hand in hand with the increased independence of the municipalities, which are now *alcaldías* (towns with elected mayors).

Challenges to the modes of operation of these authorities also take more radical forms, calling into question the primacy of public decision-making and allowing ordinary citizens to play a more direct role. Whether the subject be "tactical and collaborative planning" (article by Paul Lecroart, p.175), "placemaking", or the incursion of digital with "civic techs", the challenge is both to integrate user expertise into projects and urban management and to empower local residents. Democratic experiments are not restricted to ad hoc initiatives in local neigh-

bourhoods, and local mobilisations can lead to advocacy on key metropolitan issues such as water or energy production or the modus operandi of property markets. This means that they ultimately make local governments more open to civil society. This movement, dubbed "new municipalism" (inspired by the work of the American essayist Murray Bookchin in the 1970s), has been most active between 2015 et 2019, with citizens' collectives winning seats in council elections in large Spanish cities including Madrid and Barcelona.

These dynamics reinforcing the democratic dimension of metropolitan policies are visible in the international arena, in technical cooperation programmes (article by Paul Lecroart, p.172) such as those of the *Association Internationale des Techniciens, Experts et Chercheurs* (AITEC), or political initiatives, for example United Cities and Local Governments (UCLG).

GRASS-ROOT MOVEMENTS ARE CHALLENGING THE IMPACTS OF GLOBALISATION

THE FUTURE OF CITIES

Metropolitanisation has led to the internationalisation of the work of the actors involved and new balances between economic, institutional and civic interests. But what will happen as the twenty-first century moves forward, in a world that might shrink or fragment in political and geographical terms? What role will cities play in a context where free trade is being challenged and where frontiers and national frameworks are returning (see interview with Patrick Le Galès, p.188)? What does the future hold for the flows these cities organise, in an epoch of climate change and energy constraints?

Demographic forecasts show that the territories of urbanisation, and thus potentially of innovation and trade, will shift not only towards the very large cities of India and Africa (see maps and data on p.192), but also towards a broader network of mid-sized cities. The scenarios, and even the paradigms, are not unique: choices between the "car-oriented city", the "sustainable city" and the "smart city" do not hinder hybridisations and incremental change (article by Jean Haëntjens, p.180), and other, potentially divergent, metropolitan models will have to be developed, especially in emerging economies (article by Greg Clark and Tim Moonen, p.184).

Fields of investigation are opening up for what Michel Lussault calls the new "science of the anthropocene urban environment". How can space in large cities be redefined to make them more self-sufficient and provide them with more resources, more control over their externalities, more resilience, and thus greater regional integration? How can we reconcile this necessarily increased autonomy with maintaining the function of cities as centres of exchange? The cultural revolution remains to be accomplished among planners, whose responsibilities seem huge. ■

1. Richard Florida, *The new urban crisis,* Basic Books, 2017, 336 p.
2. Dominique Lorrain, *La main discrète. La finance globale dans la ville,* Revue française de science politique, 2011.
3. Ludovic Halbert *et al., The financialisation of urban production : Conditions, mediations and transformations,* Urban Studies, 2016.
4. Commissariat général à l'égalité des territoires, *Les coopérations interterritoriales,* report downloadable at www.cget.gouv.fr

ARE CITIES BECOMING **UNLIVEABLE**?

In the last three decades, most large cities in the world have experienced strong inflation of real estate prices. This overall increase - to a varying degree - is a source of major imbalances. The link between residential densification, privatisation of housing markets and unaffordability is strengthening. There is a risk of making these cities unaffordable and unliveable even for the middle-class. Urban liveability strategies are emerging as a response to this situation, and becoming an factor of competitiveness.

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Emmanuel Trouillard,
Housing Planning Officer,
L'Institut Paris Region

FOTOVOYAGER/ISTOCKPHOTO.COM – APARTMENTS IN *KOWLOON*, HONG KONG

All over the world, housing costs are becoming increasingly disconnected from incomes in large cities. This is a major phenomenon in both scale and duration.
International comparisons of housing costs are not easy to make, especially on the scale of major metropolitan areas. These are generally based on indexes determined and calculated on a national scale. Despite varying situations in each country's real estate markets, data shows a very strong and convergent global increase in property prices since the 1990s. Using price data compiled for 42 EU and OECD member states, economist Jean Cavailhès[1] has shown that 16 countries saw real estate prices more than double between 1996 and 2007 (including

France, the UK and Spain), while 12 others saw increases of between 50 and 100% (including the USA). Only 5 countries (including Germany) saw property prices fall over the same period. As Cavailhès states, "*This international convergent increase is unique in history. Moreover price rises have never been so high, and the upward trend has never lasted so long*". In Europe, although prices fell slightly following the subprimes crisis in 2007-2008, they began to rise again in 2013. Prices have even risen sharply in Germany since 2010.

REAL ESTATE INFLATION IN WORLD CITIES

In the light of this nationwide data, it comes as no surprise that world cities, which are generally characterised by extremely tight property markets in their respective countries, have seen even sharper rises in property prices. The Paris Region (Île-de-France) has seen real estate prices more than treble since the mid 1990s.

According to the latest available CBRE data, Hong Kong is currently by far the most expensive city in the world for real estate, with prices per square metre nudging 15,000 euros (and up to 29,000 € in prime areas), followed by Singapore, New York, Shanghai and London. According to CBRE, Paris (agglomeration) comes in at 6th place with prices slightly above 5,400 euros per square metre; and only at 10th place if we only consider prime areas, which, at less than

XAVIER POINT/CPA-CPS

Participative housing programmes can help families to stay in the city. Diwan, Montreuil (*Grand Paris*).

15,000 € per square metre, lag behind cities such as Sydney, Moscow and even Lisbon. The low score of Paris can partly be explained by the weakness of the euro against the dollar when the survey was carried out.

This data also confirms that, in many world cities, the post-subprime period also corresponded to a sharp rise in real estate prices, sometimes with two-figure annual growth rates, as in Shanghai, Beijing, Hong Kong and Toronto. This also concerns cities famed until now for their "liveability", such as the largest Australian and Canadian cities, as well as Berlin, which does not appear in the CBRE data. Local attractiveness strategies largely based on the liveability of a city and the relative affordability of its housing can thus, when successful, result in real estate inflation and thus erode this initial affordability. In a way this phenomenon of "top-down" market standardisation reproduces, on a national or even international scale, the gentrification observed in large cities.

GLOBAL CITY LIVING REPORT

The *Global City Living Report. A City by City Guide* 2017 published by the real estate consulting firm CBRE, which provides property and rental prices for 29 world cities (both entire cities and prime areas: the most sought-after areas, seen as the safest investment opportunities). This data must be handled with care: in addition to the usual problems relating to the size of the area covered (which can vary quite a lot from city to city) and the uniformity of available data from one country to another, average disposable income figures fail to take into account not only differences in taxation and social contributions, but also the distribution of the income across the total population. Such comparisons thus have their limits. The structure of local property markets (proportion of home owners, proportion of non-market self-builds, etc.) should ideally also be taken into account. ■

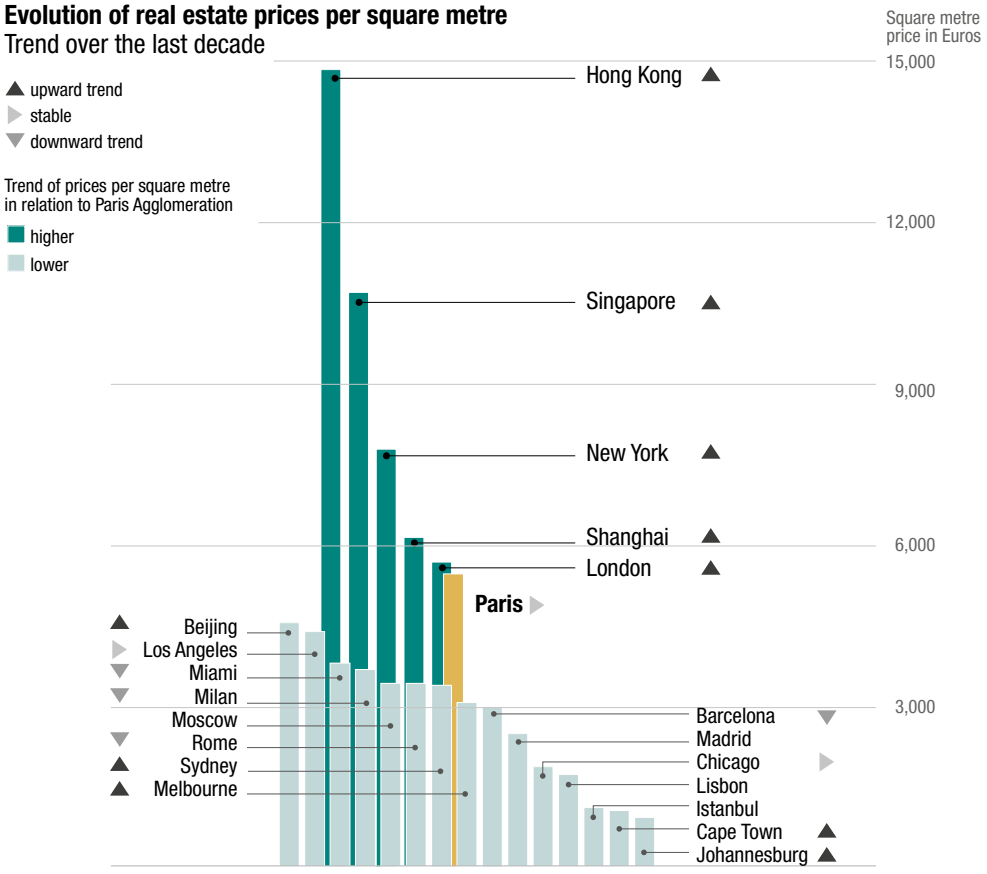
A METROPOLITAN "HOUSING CRISIS" ON A GLOBAL SCALE?

Real estate inflation in large cities has restricted access to real estate markets for the less affluent. Many of these cities are experiencing a real housing crisis.

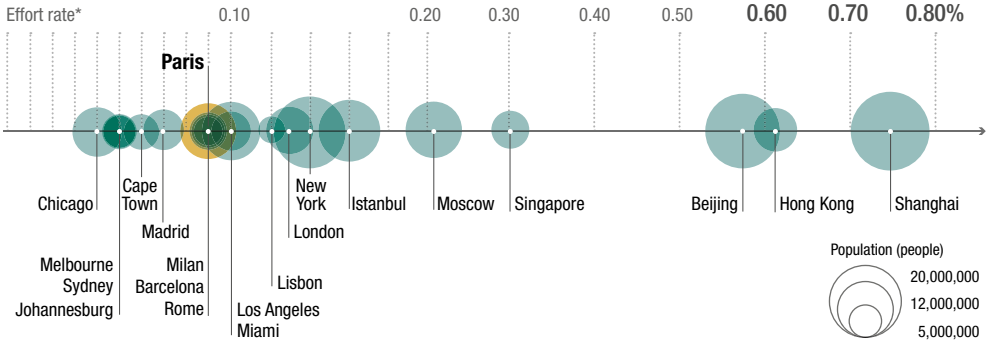
By allowing us to compare real estate prices to average income in different cities[2], the data made available by CBRE suggests that there are contrasting situations from one city to the next. There is no simple relationship between the effort required to purchase a home and the population of each city: Although larger cities tend to induce stronger economic attractiveness and increased competition for premium space, in certain cities real estate prices still adapt to income levels that are on average higher than in the rest of the country. This means that the

COMPARISON OF **REAL ESTATE PRICES** IN LARGE CITIES

Evolution of real estate prices per square metre
Trend over the last decade



Financial effort for home **buyers**



*the financial effort rate is the relationship between the price per square metre and the median annual income.

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Sources: CBRE, Global City Living 2017 - A city by city showcase

financial effort required (with respect to income) turns out to be comparable, or even lower, in cities such as Paris, London or Los Angeles, than in smaller European cities such as Lisbon, Rome, Barcelona or Madrid.

But price per square metre can also conceal choices that have to be made regarding the size of the units purchased, which of course significantly impacts "liveability" for households. Even though the CBRE data requires a degree of circumspection, it does tend to show, for example, that Paris stands apart for the particularly small size of its housing units (about 60 square metres on average), which is smaller than homes sold in London (96 sq.m.) and even smaller compared to cities where property development tends to favour single-family houses rather than apartments (124 sq.m. in Los Angeles and 151 sq.m. in Sydney).

We see a much more significant mismatch between real estate prices and average income in countries whose economic development is more recent, in particular some of the largest cities in Asia. Singapore and Chinese cities (Beijing, Shanghai and Hong Kong) clearly stand apart from the model of other cities covered in the CBRE survey regarding affordability. These high-density cities are characterised by significant income inequalities, a fact that biases data that only looks at real estate prices and thus home ownership.

LIVEABILITY AND AFFORDABILITY, KEY ISSUES FOR METROPOLITAN PARIS

Compared to these extreme examples, the liveability of European cities, such as Paris with its agglomeration, can be seen as a model to be preserved as they face continuous population growth and rising housing prices. More and more world city benchmarks[3] include indicators of liveability and housing affordability for employees. Ranked 39th (just ahead of Lyon and London) in the 2018 edition of Mercer's *Quality of Living Ranking,* Paris remains "*well ranked for its size*", despite rising living costs, given that "*the highest-ranked cities are generally medium-sized*".

The financial effort for housing within the agglomeration of Paris remains, on average, relatively low in comparison with other world cities of comparable or smaller size. Paris is characterised by the relatively small gap between prices per square metre in prime areas and the rest of the agglomeration, the former being on average only 2.1 times higher than the latter. In the least balanced metropolitan markets, this multiplicand can be significantly higher: 7 in Lisbon, 6.9 in Sydney, 4.3 in London, and 3.9 in Moscow.

But what is true of international cities is not necessarily to be applied on a national scale. Prices in the Paris Region, for example, remain significantly higher than in other French cities. And for its households that are not in the upper income brackets, especially families with children, the residential attractiveness of smaller cities can be greater, provided they offer suitable employment opportunities, or when new working practices (teleworking, third places, etc.) combined with efficient transport solutions, make it possible to travel rapidly to the economic centre of Paris.

Given these new opportunities for weighing up economic and residential attractiveness, as well as their implications on the urban models and on commuting, metropolitan housing strategies are inevitably at a crossroads. The sustainability of the current model of development of the largest cities, less and less inclusive for the poor, needs to be questioned. Combined with the increasing environmental issues, could this ultimately limit the attractiveness and economic dynamism of literally "unliveable" metropolitan areas? ■

1. *Les prix des logements et leurs déterminants fondamentaux. Analyse des évolutions internationales en longue période,* May 2018. Website: politiquedulogement.com.
2. A rough indicator of the financial effort required from prospective home owners.
3. Publications designed by consultancy firms, mainly in the service of multinational enterprises.
4. Emmanuel Trouillard (coord.), *Métropolisation et Habitat,* IAU-IdF's contribution to the diagnosis of the PMHH (Metropolitan Housing and Accommodation Plan) of the Métropole du Grand Paris, Sept. 2018.

PAUL LANGROCK/ZENIT-LAIF-REA

Building activity in the Battersea Nine Elms area, Wandsworth, London.

IS GLOBAL **URBANISM IN CRISIS**? THE CASE OF LONDON

Globalisation is transforming cities. Since the 1980s, private owners, developers and investors have played an instrumental role in defining urban transformation projects in London. The capital has a concentration of examples of this partner-led, negotiated urbanism, where the private sector is in a dominant position. Against this background, can the real estate offer still meet local needs in London or in other global cities?

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Martine Drozdz, Researcher, French National Centre for Scientific Research (CNRS), Laboratoire Techniques Territoires Sociétés

After a period of stagnation during the credit crisis, which significantly affected property markets from 2010 onwards, London experienced a new construction boom. In marked contrast to the tall buildings built in the 1980s and 1990s, skyscraper projects are no longer restricted to office developments. Residential towers are transforming the London skyline, whose height had not grown significantly since the post-war modernist era.

Very high-end developments, true vertical villages, testify as much to the integration of the city into globalised financing flows as to its social and spatial fragmentation. Property investment is primarily focused on a selected geographical area, the business district of the City and its immediate surroundings, where property regulations are less stringent than in Westminster. Urban projects are also concentrated around transport hubs, on the banks of the Thames, and in regeneration areas.

From 1980 to 2000, the most spectacular buildings were built and occupied by major financial services firms. Most of the City's towers built over the last ten years, however, have been built speculatively, designed for the leasing market and destined for resale in the relatively short term.

Recent transactions also reflect a change in the investment landscape. Whereas before a broad array of pension funds, insurance firms and Real Estate Investment Trusts took part in major transactions, more recently these have been carried out by a handful of firms with extraordinary financial capacities. The liquidity of the London office market is thus on the wane, to the benefit of a few institutional investors who occupy positions of dominance. Concerns are starting to be raised about the risk of a disconnect between an offer turned towards international investors and local demand.

THE PROFIT MARGINS OF "XXL" PUBLIC-PRIVATE PARTNERSHIPS

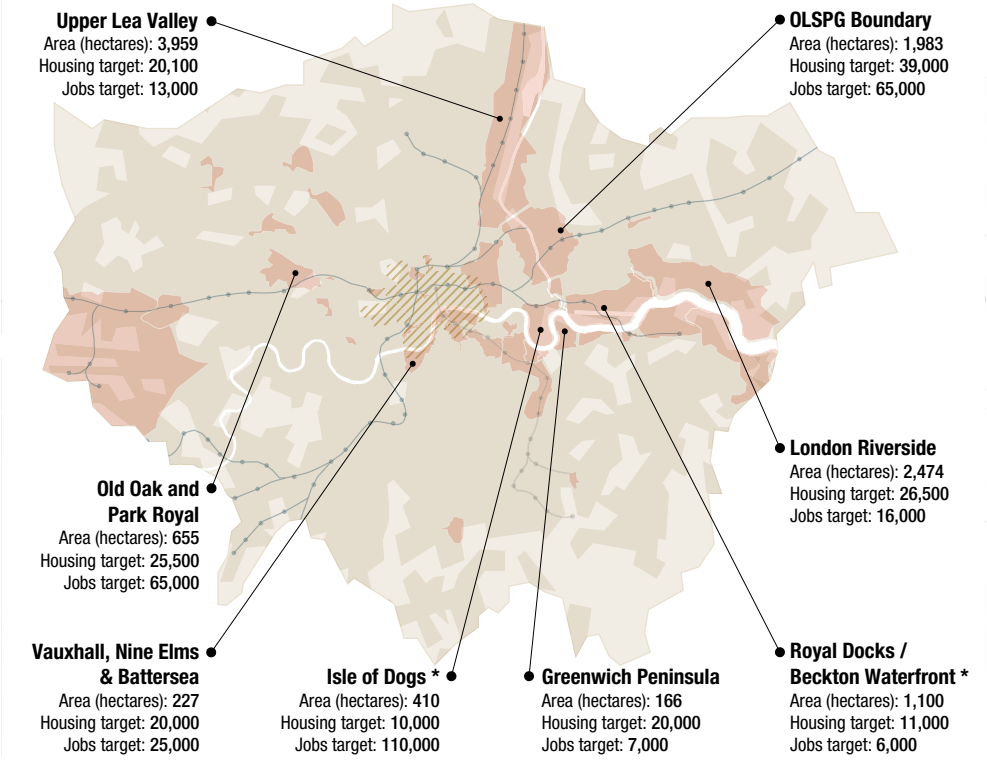
In "regeneration areas", in other words post-industrial areas and/or districts with a large proportion of social housing around the edge of the historic centre of London, a new form of partner-led urbanism is emerging. It governs the development of urban areas whose size varies from about 20 to about 100 hectares. Land ownership is sometimes mainly public (Royal Docks), but most often it is split between a few large private owners (Greenwich, Nine Elms). Public-private consortiums, which make use of development agreements, act as developers. In all cases there is a trend towards huge building schemes, a sharp increase in density, and a privatisation of public space.

Development projects whose land belongs to Greater London are run by a lead-developer following a call for tender, in compliance with EU regulations. There are no public development bodies as in France. These projects are coordinated by a single private developer (Kings Cross), or by a public-private partnership with relatively little capacity for action (Vauxhall Nine Elms Battersea).

The lead-developer also coordinates ground decontamination operations and acts as a financial trustee. They might be responsible for defining the size of the blocks, the layout of interior circulation areas, the design and development of areas of public use, and the building of community facilities. They coordinate and commission preliminary surveys, environmental surveys, and impact surveys, organise consultations, and define modes of use in accordance with property market trends. Outline permission for "XXL" urban projects makes it possible to obtain planning permission for a large site based on a detailed presentation of a sample of the project, providing considerable flexibility in terms of redefining the size and uses of blocks, whose ultimate purpose is established incrementally.

In these projects, councils support the lead-developer-coordinator more than they provide directives. For the Nine Elms – Battersea area, for example, a construction and landscaping charter has been drawn up by borough councils, but with no guarantee that its recommendations will be followed. In 2010, in its analysis of the project, the Design Council noted the risk

THE OPPORTUNITY AREAS OF THE **LONDON PLAN**



* *Source:* Annex One, The London Plan, *March 2016*

of insufficient sunlight in the lowest-level housing units and recommended that the evolution of the site should be closely monitored, while observing that public authorities lacked the necessary tools to influence the ultimate form of the development.

Following local government reforms introduced during the Thatcher era and reinforced by David Cameron, councils have limited investment capacity, even if it is now possible for them to retain profits from the sale of properties it owns (capital receipts). In this highly restrictive context, only partnerships with private actors make it possible to make investments, but this in turn limits their control over urban projects.

THE HOUSING CRISIS: HOW CAN THE GOALS OF THE 2019 LONDON PLAN BE ACHIEVED?

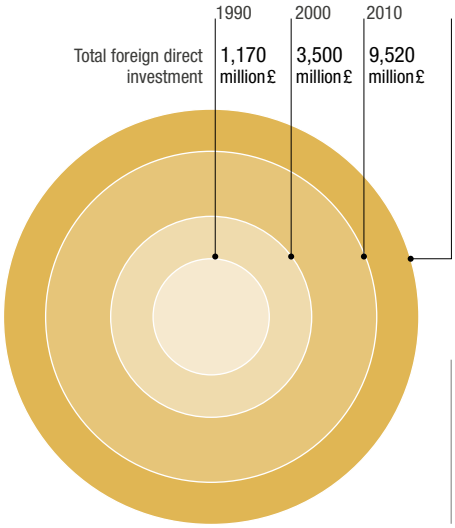
Strong population growth and the rising property values make it necessary to adjust available housing to Londoners' needs. In some residential districts where property prices have risen particularly sharply, the number of transactions has fallen significantly because few buyers can afford the corresponding mortgages. The private

As a major source of brownfield land, London's *Opportunity Areas* are identified in the London Plan as areas having a large capacity for urban development. They are earmarked for future housing or commercial use and have existing or potentially improved public transport access. Along with other supporting facilities and infrastructure, each area can accommodate at least 5,000 jobs, 2,500 new homes or a combination of the two. The Mayor of London works closely with the boroughs and other stakeholders in developing *Opportunity Areas,* as he provides encouragement, support and leadership in preparing and implementing *Planning Frameworks,* which serve to help realise the potential of these areas.

Planning regulations are light with a priority on development over preservation of the existing urban fabrics and heritage buildings. Conflicts between the developers, the borough councils and the Mayor do arise in the planning process.

A **REAL ESTATE MARKET** UNDER INFLUENCE

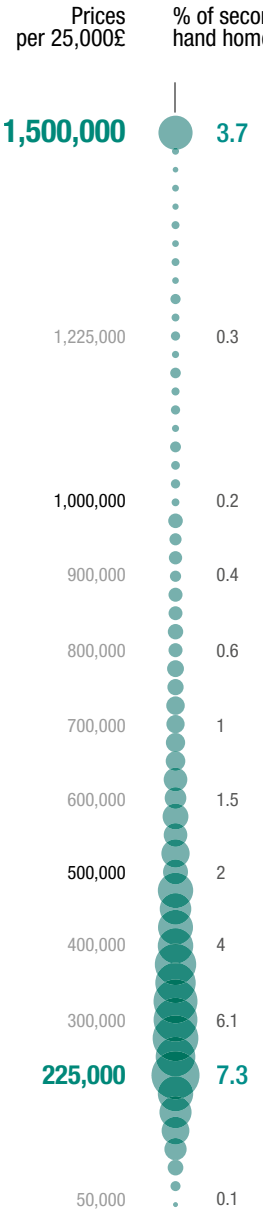
Foreign investment is shaking up London's real estate market



(...) "Risk of disconnection between an international investment-oriented supply and the local demand."

An insufficient supply of **affordable homes**

Unbalanced distribution of prices for **second hand homes** sold in London (2015)



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Sources: ONS, Office for National Statistics, 2018 / Land Registry price paid data.
Data produced by Land Registry / MHCLG, Affordable housing live tables

residential market thus has a rather unusual structure: properties valued at over £1.5 million are almost being overproduced, while the intermediate sector, which makes significant losses, increases pressure on properties in the lower third of the market. Owner-occupants under 45 are now a minority, and overcrowded housing is on the increase.

Currently, only the shared ownership system offers the equivalent of very long-term leases with guaranteed rent control. Occupants purchase shares in their homes from a housing association and pay rent on top. Rent increases are capped, as well as the profit made from reselling householder shares. Although it only applies in a minority of cases, this system is on the increase in regeneration projects, raising the risk of replacing social housing with accommodation targeting better-off households.

THE LONG-TERM PUBLIC INTEREST IS NOT THE CONCERN OF PRIVATE INVESTORS

To influence the production of housing, the Mayor has three sets of tools at his disposal. First of all, he can provide financial support to developers. Sadiq Khan announced the creation of an investment fund for the period 2016-2021, the *London Investment Programme,* totalling £3.15 billion. Subsidies ranging from £28,000 to £60,000 are available for the construction of housing that fits one of the affordable housing categories.

The Mayor can also speed up planning permission procedures. He has direct responsibility for examining projects including over 150 housing units. Under the Khan administration, projects offering at least 35% social or intermediate housing are exempt from viability assessment, a rather time-consuming preliminary financial assessment process.

The third area of intervention concerns the mobilisation of land resources. The Greater London Authority (GLA) has a land portfolio of 635 hectares, inherited from the decentralisation of State-owned land and belonging in part to Transport for London (TfL). Although this represents a significant asset for an authority that initially possessed scant resources, this portfolio seems modest in comparison with other large cities. To mobilise these assets in favour of affordable housing, the administration once again has various tools at its disposal: it can offer a reduced price for land sold by TfL; or it can redevelop the land with commercial partners via the London Development Panel, a group of developers set up by the GLA.

"English-style" negotiated urbanism is often praised for its flexibility and its ability to adapt to changing economic circumstances. The strong involvement of private actors, from the design phase to the project management phase, is another feature of contemporary globalised urbanism. But the fact that local authorities have such a narrow margin for manoeuvre runs the risk of sharpening territorial divides in the capital. The long-term public interest is not the primary concern of private investors. ■

FURTHER READING

ICONIC DESIGN AS DEADWEIGHT LOSS : RENT ACQUISITION BY DESIGN IN THE CONSTRAINED LONDON OFFICE MARKET
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"WE WORK TURN HEADS IN RAPID MARCH ACROSS LONDON", *FINANCIAL TIMES*
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"CHANGE IN CENTRAL LONDON BUYERS MIX SPURS LIQUIDITY DROP", *REAL CAPITAL ANALYTICS,* 12/03/2018
LEAHY Tom.

"LONDON'S GROWING UP", *NLA INSIGHT STUDY*
NLA (New London Architecture), 120p.

INTERVIEW

"DIGITAL REVOLUTION MAKES PUBLIC SPACE THE MOST VALUABLE URBAN ASSET"

Isabelle Baraud-Serfaty,
Founder of Ibicity,
urban economy consultant,
Lecturer at Sciences Po
PHOTO: BRIGITTE CAVANAGH

Renaud Le Goix,
Lecturer at Université
Paris-Diderot – Paris VII
(Sorbonne Paris-Cités),
Member of the Géographie-cités
research unit
PHOTO: LIONEL LASLAZ

What can we learn from comparing urban economic models? Are we moving towards the privatisation of city making?

Renaud Le Goix A comparative and historical approach helps us to observe the spread, and in a sense the triumph, of the entrepreneurial model for urban production.
The system we often come across today is that of macro-plots, in other words very large lots handed over to single private developers.
This model, which leads to the privatisation of circulation and access routes, recalls the gated communities and condominiums that have existed for so long in the USA. These examples show how hard it is to manage these common areas openly, and highlight the tendency to want to control their modes of use and the effects they have on property values. It appears that the more the scale of intervention of private developers increases, the more the process of enclosure intensifies: public access tends to be restricted, excluding anyone who doesn't belong to the "club".
In the United States, the process of the privatisation of public space arises directly from city financing models. Local resources are highly dependent on property values, which, as they rise, increase fiscal contributions to local government budgets. Restricted access has been all the more strongly encouraged because by increasing property values it has provided responses to financial difficulties experienced by local governments. During the Nixon and Reagan administrations, local governments were financially throttled by a 50%–plus reduction in federal funding. This prompted a gradual shift from a managerial system, which aimed to provide the population with facilities according to fiscal capacity, to a process where attractiveness and competition are used to lure investors.
This entrepreneurial regime has repercussions on the way public space is produced. A good example is New York, which has developed large-scale *Privately Owned Public Spaces* (*POPS*) schemes since 1961. In 1975, the city was bankrupt. A deal with private developers made it possible to continue to produce quality public spaces without paying the price: they obtained supplementary building rights based on the number of square feet of public space they agreed to develop.
This entrepreneurial model then became more widespread because very large cities compete to attract property investors and large firms: they tend to copy one another. This contributes to the spread and standardisation of urban models (international architecture and commercial outlets, etc.) and responds to economic development benchmarks.

Isabelle Baraud-Serfaty We have to distinguish two different scenarios where the "privatisation" of public spaces is concerned. First there's the situation where such spaces belong to a group of private joint owners, who are either owner-occupants or small investors. We often see this in France when a developer intervenes on the scale of a macro-plot and disappears when the last home is completed. Open spaces, whether accessible to the public or not, are usually owned by the owners association (in France the *Association Syndicale Libre*). This is also the model for gated communities in the US. The second scenario, which is very common in England, is where open spaces belong to financial investors who own entire neighbourhoods. These are also known as *POPS*. In both scenarios, the question

PAUL LEGRAND/L'INSTITUT PARIS REGION

Privately Owned Public Spaces (POPS) are difficult to identify, though they are subject to different rules from public streets. Birmingham St Martins Church Square.

of who owns and manages public space increasingly tends to be bound up with that of the creation and management of services within the neighbourhood. As well as the public or private ownership of public spaces, their accessibility is what defines them. The issue of knowing whether they are open to all or not does not only arise in terms of public access, but also where urban service providers are concerned: whether these be minicabs, charging stations, external communication, micro-mobility or logistics, public space is a key resource for them. In this regard, it is interesting to look at work in America on '*curb management*'[1]. The kerb is where the different functions of a roadway meet. This loading-and-unloading area is where the most profound changes occur in terms of new uses and new partnerships between public and private players. There is no single word for kerb in French: A new term would be useful to materialise its reality and the specific issues relating to it.

R.L.G. Indeed: the response with regard to financing and privatisation depends on the nature of the public space we're talking about. Traditionally, in Europe, the notion of public space refers to a somewhat mythified agora, ranging from the Roman forum to the *Place de la République* in Paris: in other words, a place for public speaking. But it is notable, for example, that in the regime of protest we are experiencing with the "Gilets Jaunes" movement, the key places for public demonstration are road roundabouts, toll plazas, and shopping centre car parks. This reveals that the notion of public space is conditioned by the way people perceive themselves and construct themselves in social and political terms. I discussed this in an article in *Histoire* magazine entitled *Occupy Wall Street*[2]. The latter movement was only possible in Manhattan in 2011 because the conditions for available space were met. The gathering took place in a type of public space where the police could not rapidly intervene: a POPS, namely Zuccotti Park. The private owner, mindful of his public image, did not wish the police to step in. This shows that an interpretation focusing on the regime of ownership and the system that defines rules of use is not enough to define what public space is. Whatever the judicial framework may be, social perception is a decisive factor.

What factors are bringing about the most significant changes to public space today?

I.B.-S. Without question, the digital revolution and the fact that its actors have entered the world of urban development.
In our study of new urban economic models[3], Clément Fourchy, Nicolas Rio and I analyse the way the "city of modes of use" has taken over from the "city of infrastructures". The "city of infrastructures" emerged in the nineteenth century at a time of industrial-era urban growth, with the creation of major utility and service networks (drinking water, sewers, public transport, electricity and gas). The existence of these networks was a necessary and sufficient condition for providing the services. Now, the key to a good urban service is its ability

MAXIMILIAN KAWLE/INSTITUT PARIS REGION

Paris, 2019: congestion of the public space by micro-mobility systems is a strong issue. Cities are under pressure from tech giants.

to respond to individual needs and modes of use. Large service networks are still necessary—there can be no car pools without roads and no smart grid without a network—but the key actors delivering the services are those who are able to address user needs as closely as possible, in particular digital platforms.

The pavement or sidewalk is a good example of this change. Historically, the constitution of public space as we perceive it today and the creation of large-scale utility networks have taken place simultaneously. In France, a law passed in 1845 created pavements, while individualised services (water-carriers, rag-and-bone men, and so on) were replaced by unified collective systems.

Today, the subsidiary of Alphabet (Google's mother company) dedicated to urban innovation is called Sidewalk Labs! It has undertaken to digitalise the kerb: access to information on public space, which can potentially be monetised, thus becomes a prerequisite for physical access to it.

With the individualisation of services that the digital revolution, we are now capable of assigning a cost to each and every user, of providing bespoke services, and of "*calculating [costs] to the nearest cent*", in Dominique Cardon's words[4]. Are we moving towards the hyper-individualisation of urban services? With the emergence of what Nicolas Colin and Henri Verdier term "*the multitude*"[5] and the development of short supply chains, are we not, in a way, returning to the situation that existed before large networks, raising the question of city neighbourhoods that might not enjoy the same level of services? The project that Sidewalk Labs is developing in Toronto will perhaps provide some answers.

Doesn't the French model show that public authorities can continue to produce quality public space despite financial constraints and the increasing presence of new private actors?

R.L.G. Yes, because in France, there are still tools that public authorities can use to intervene in terms of planning. This means they have to shoulder the cost, which can be high. The ZAC[6], for example, is a system that hardly exists anywhere else. It makes it possible for municipalities to take charge of creating high-quality, genuinely public spaces. Planned developments around Grand Paris Express stations illustrate this.

But this is not true everywhere. Where the market is buoyant, there is a real opportunity for tight municipal control, by establishing competition between interested private investors. This is less true in other types of administrative area: the power of local authorities, which is fragmented and has little leverage in terms of expertise and negotiation, is much more dependent on models put in place by private developers.

I.B.-S. There's a distinction to be made between three categories of private actors, who interact with the public sphere in the production of urban space. Urban service providers (such as Veolia and Suez in France) operate in the framework of a public service delegation system, acting

as subcontractors for public authorities. Firms operating within the planning and property development chain work under a regime of authorisation and depend on decisions made at local authority level: standard building permits, decisions to use planning tools such as *POPS* or macro-lots, and so on. Conversely, the new digital actors are much more user-oriented and do not require local authority approval. This means that a system where the public has prerogatives with respect to planning, in particular where public space is concerned, and sub-contracts to private firms, is being superseded by a system where the private sector proposes modes of use without local authorities' having even thought about providing them. This means that the way spaces occupied by the public and private sectors are articulated is now formulated in very different terms.

What changes to collective regulations are required?

I.B.-S. In a context of shrinking financial resources, more and more developers and authorities are tending to think of public space as a cost centre. It is nevertheless paradoxical to put it private operators in charge of it at the precise moment when its strategic dimension is intensifying. Without even mentioning the symbolic significance of public areas, it seems to us that authorities must necessarily retain ownership because they are the city's most valuable asset. They could monetise its use, targeting operators who use it, and make a profit from it. This runs counter to the idea that public space is freely accessible and free of charge, but here we are only talking about the specifically economic use of public space.
At the same time, all these changes show that we cannot avoid engaging in serious debate about the legitimacy of public authority intervention. Everything we have become accustomed to in terms of local authority intervention has to be re-anchored, which means breaking down taboos on what public space is. The primary role of the local authority is to establish what remains communal, and thus to set the boundaries of the individualisation of collective services and determine the adjustments that need to be made.

R.L.G. Data collection and, more broadly, expertise on individual behaviour have evolved: Where do I consume? Where do I pick up my bike or my car? Where do I get on the Metro? What streets do I use? These are areas in which public authorities have lost the battle. They lack the necessary expertise, skills and resources to collect such information. Geo-referenced local information is now a major game being played between large corporate groups and a public eager for open data and open source applications. But local authorities are increasingly being excluded from this process. Indeed they are becoming its clients and are increasingly dependent on private digital actors. Today, as they seek new ways of developing cities, local authorities are losing control of the provision of new collective services. Access to certain public spaces, or at least to the services they offer, requires the mediation of the smartphone and the credit card: this raises questions of democracy. We are a long way from the traditional concept of public space, for example the *Bois de Vincennes.* In this Parisian park, a wide variety of modes of use are constantly being negotiated: from time to time, certain modes of use predominate – on Saturday mornings, cycling and jogging – but social interaction occurs as the place each occupies is negotiated, without necessarily requiring third party regulation. There's also the risk of sorting zones according to their value and reinforcing processes of social polarisation and exclusion. Guaranteeing spaces where conflicts can be regulated without being arbitrated in advance by economic criteria remains the legitimate role of public authorities. ■

Interview by Paul Lecroart, Léo Fauconnet and Maximilian Gawlik

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NETWORKS: SOFT PLAYERS SERVING CITIES

Large cities are developping management and coordination bodies on a metropolitan scale. Their power as political authorities is largely based on networks and alliances. International cooperation plays different roles, such as lobbying and “urban diplomacy”. But most importantly, these networks stimulate the circulation of urban models.

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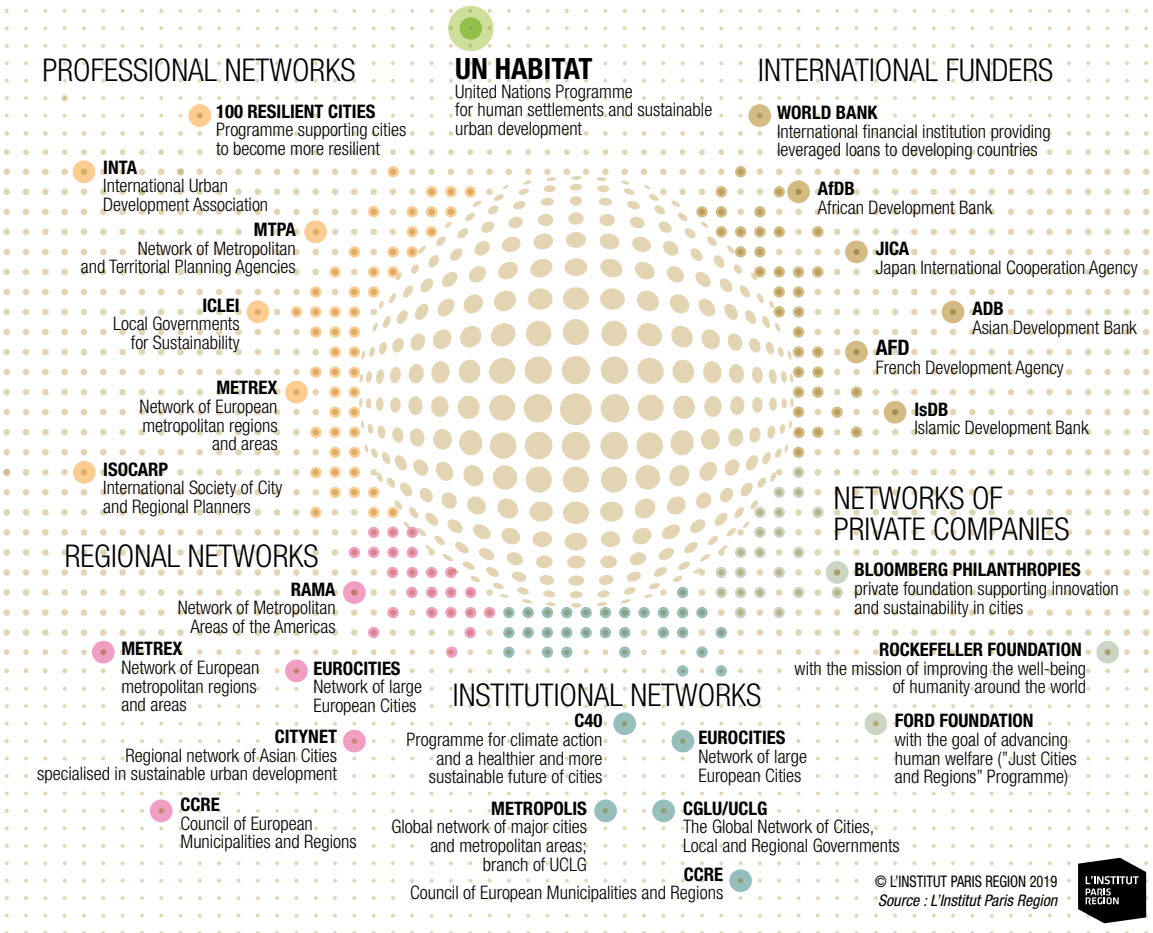
Éric Huybrechts, Architect and Urbanist, L’Institut Paris Region
and **Lola Davidson**, Deputy General Secretary, INTA

The New Urban Agenda of the United Nations serves as a framework for institutional actors from all over the world.

The emergence of large cities, which represent over 40% of the world’s urban population, and the complexity of their management, lead actors to seek new modes of governance. The aim is to ensure that they operate effectively, to regulate their economies in order to improve social justice, and to adapt their territories in order to limit their vulnerability and finance their development.

The metropolitanisation process calls existing practices into question, altering the scope of intervention and calling for new skills. Networks of large cities or metropolitan areas, urban development platforms combining public and private actors, and international associations whose members are planning professionals, have had to adopt a stance on the issue of metropolitan development and governance. This has given rise to shared concerns regarding the scale on which public policy and planning projects should be implemented, and focusing on new relationships between large cities on the one hand and states and international bodies on the other.

Run by non-profit associations, these networks are neutral platforms for exchange and interaction. At a time of major social, environmental,



economic and technical transition and indeed disruption, they help to break down the barriers between professionals and elected officials, and to cope collectively with unforeseen situations. The flexibility of these organisations means they can rapidly evolve and support members who require peer-to-peer expertise and advice, within a framework based on learning, experimentation and mutual enrichment.

THE EVOLUTION OF NETWORKS AND THE CHALLENGES OF METROPOLITANISATION

As separate administrative entities, groups of municipalities or regions, metropolitan cities are playing an increasing role in collegiate organisations representing local authorities within international networks, while the presence of national governments has dwindled.

One consequence of this is that the subjects these organisations deal with have evolved. Platforms deal with subjects that are of major concern to cities and which appear in strategic planning documents or arguments presented by elected officials: governance, planning, financing, large structural projects, innovation and smart cities, metropolitan diplomacy, financialisation, vulnerability, food, climate change, social and territorial inclusion, and so on.

DIVERSITY OF AIMS

Several major objectives justify the existence of these networks, such as sharing best practices, territorial marketing, or the lobbying of multilateral organisations.

They are resource centres focusing on the challenges and themes relating to metropolitan issues. They train their members and partners, in particular on questions of planning, governance (multi-actor initiatives), and organise collaborative workshops (urbanlabs, etc.) in order to produce innovative projects. As tools for supporting best urban planning practices, they act as forums for exchange and experience via workshops, seminars, conferences and publications, and sometimes also help to fund projects.

The networks give regions, in particular metropolitan areas, opportunities to develop their local marketing strategies on an international scale. Metropolitan areas carry out attractiveness-raising policies that lead them to compete on a global scale and actively seek areas for development.

Cities can also be found on platforms that bring together public and private members and liaise with global business networks.

PROVIDING METROPOLITAN AREAS WITH A VOICE

Last but not least, metropolitan networks give metropolitan areas a voice in negotiations with state governments and multilateral bodies, earning them recognition as legitimate

THE INTERNATIONAL URBAN DEVELOPMENT ASSOCIATION (INTA)

INTA is an international experience-sharing network in the field of urban and territorial development and an independent knowledge production platform. Originating in the New Town movement of the 1970s, INTA brings together public and private leaders in all sectors of urban development to develop a shared vision of the city of tomorrow and to build a collaborative and participatory programme. It has over 2,000 members and partners in 60 countries, including L'Institut Paris Region.

The work carried out by its members on the subject of metropolitan development focuses on these main questions:

- **How should private and public actors be mobilised on different geographical scales?**
- **How can we develop urban projects that are meaningful on a metropolitan scale?**
- **What kind of metropolitan infrastructures are required?**
- **How can territorial inequalities be corrected within metropolitan areas?**
- **How can metropolitan areas differentiate themselves in order to avoid the risk of standardisation?**
- **How should we approach urban/suburban and urban/rural relationships? What is the responsibility of the metropolitan area with respect to adjoining and interdependent areas?**

These questions gave rise to a programme of discussions focusing on metropolitan strategies in transition (2011-2015) in partnership with the Deltametropool Association (which plays an active part in the development of the Randstad in the Netherlands), and to metropolitan planning discussions on a European scale (2015-2016) focusing on two main subjects: innovative economic development; and social cohesion and territorial equity.

A conference entitled *Métropoles européennes, stratégies et gouvernance* (Major European cities: strategies and governance) was also organised with the Paris City Council to initiate Europe-wide dialogue on the Grand Paris metropolitan development scheme.

Last but not least, in the framework of a multi-year programme (2015-2016, then 2018-2020) on the implementation of the Sustainable Development Objectives and the New Urban Agenda, the network focuses on the issue of solidarity between cities and metropolitanised territories (suburban and rural areas) based on the principle of reciprocity, which raises questions on agricultural and industrial production chains, modes of governance, and the social responsibility of certain actors (private firms and local authorities). ■

discussion partners on subjects relating to regional planning. They are thus environments in which international alliances can be constructed between regions that hold strategic economic power and are often operated by major political actors.

The New Urban Agenda, adopted following the Habitat III world conference on sustainable urban development in October 2016, acknowledges the importance of local authorities and metropolitan areas as major actors who can help to achieve the UN Sustainable Development Goals adopted in New York in September 2015.

Certain platforms communicate on climate change at COP conferences. Shared initiatives are initiated at international events such as the World Urban Forums via the UN-Habitat World Urban Campaign and Climate Chance summits bringing together non-governmental actors working on climate change or other targeted initiatives run directly by one or more networks. Networks of European cities, metropolitan areas and regions lobby the European Commission on fund allocation and the urban development strand of cohesion policy. More recently, 13 organisations gathering together local authorities and associations of authorities wrote a shared letter to the G7 emphasising how vital it is to acknowledge the urban dimension of development and the key role played by local government in finding solutions to global challenges.

NETWORKS NEED TO WORK BETTER TOGETHER

Each network has its own identity, and new ones are created all the time. The need for a shared understanding of the metropolitan phenomenon and for transverse approaches and methods means that networks have to work together in order to share and capitalise on their respective acquired knowledge. ■

METROPOLITAN AND TERRITORIAL PLANNING AGENCIES GLOBAL NETWORK (MTPA)

The MTPA network was launched at the Habitat III conference initiated by the national federation of the French planning agencies (FNAU), the network of the Moroccan urban planning agencies (MAJAL), the network of the Mexican urban planning bodies (AMIMP), and several urban planning authorities including L'Institut Paris Region, the Beijing Institute of Urban Planning and Design, Urbalyon, the Regional Development Agency of de District of Bamako, the Los Angeles Metropolitan Planning Organization, Emplasa (São Paolo) and the Yangoon Urban Planning Bureau.

MTPA organises thematic debates, in particular at international events such as the Climate Chance Summit (Agadir), the World Urban Forum (Kuala Lumpur), and the FNAU conference on Europe and Territories (Strasbourg). It expands its network by developing partnerships, for example with UN-Habitat, Metropolis, Habitat Professional Forum, Isocarp, etc.

MTPA stands apart from existing networks run by political stakeholders thanks to its technical focus on territorial engineering, and because it mobilises groups of professionals working in territorial planning agencies or institutes. Although modes of metropolitan governance are sometimes unstable, technical expertise is always necessary to support decision-making and build knowledge of these complex territories. This means that these organisations must be stable enough to manage data, build knowledge, and provide the cross-functional expertise required by metropolitan projects.

The role of MTPA is to engage in debate on the technical aspects of metropolitan planning, to support the creation of metropolitan planning agencies, and to emphasise how important these agencies are in supporting the management and development of metropolitan areas. To achieve this, it sets up exchange programmes, urbanlabs, task forces and shared databases on best practices, and takes part in international discussions on urban and territorial planning issues. ■

NORDIC BALTIC SPACE: A **TRANSNATIONAL PERSPECTIVE**

The Nordic Baltic Space 2050 is about seven cities getting together to build and share a common vision of their future as a macro-region. This operational initiative gives spatial expression to the European Union policy and goals on territorial cohesion. Does this example of a voluntary cooperation of city-regions on an international scale announce a real capacity to act together beyond the Nation States framework?

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Douglas Gordon, Architect, City Planning, City of Helsinki, METREX

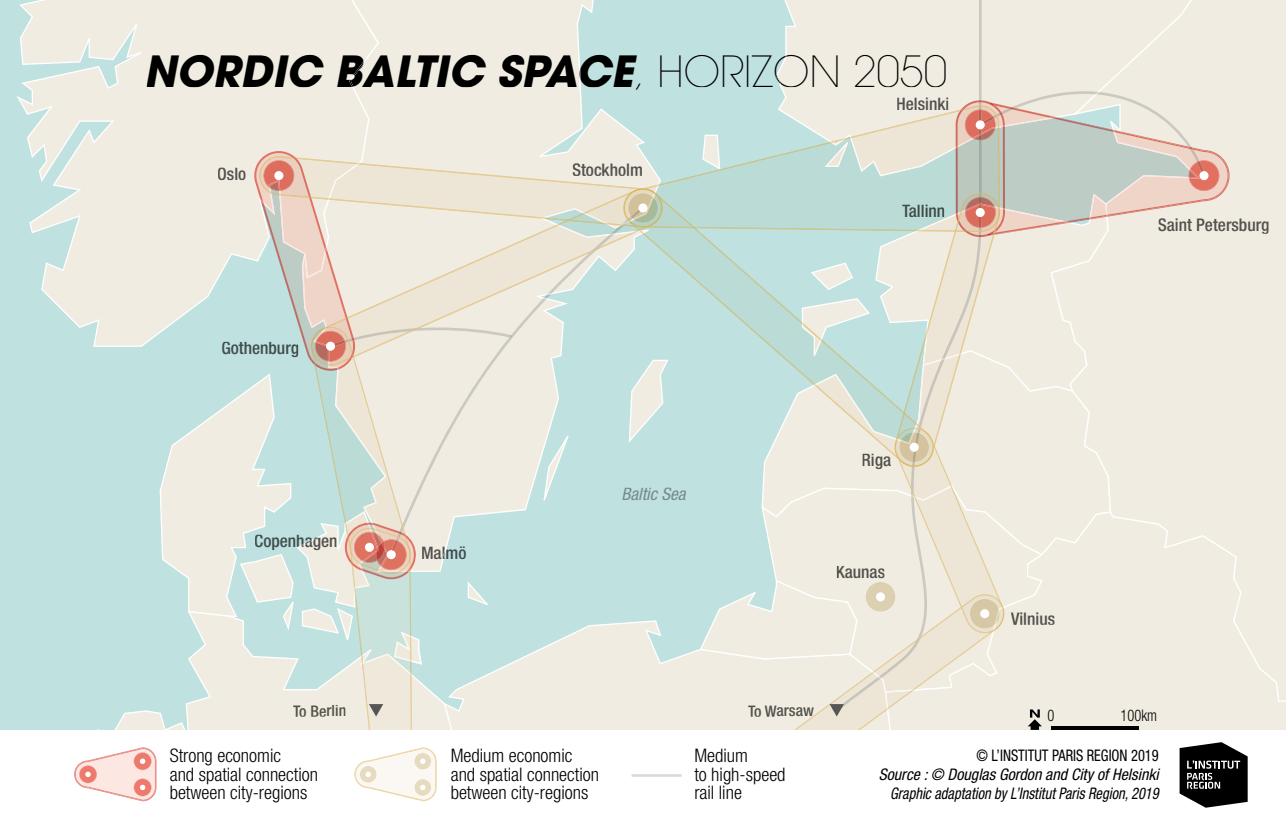
The purpose of a transnational overview for the Nordic Baltic Space (NBS 2050) is to guide the future development and structural planned development changes in its cities and regions and to manage population and economic growth. A macro-regional strategy aims to coordinate policies and processes of city-regions and serves as a tool for the implementation of actions that provide overall benefit.
As a Metrex program, the Nordic Baltic Space adopts the "European territory 2050" ESPON (European Observation Network for Territorial Development and Cohesion) analysis and uses the EU Vision of 'Making Europe Open and Polycentric' as a guide. In doing so, it strengthens ties among regions, shares work methods and learns from others' experiences. It is already helping to work towards complementarity and to find common issues to work together. The key aims are achieving a better understanding of long-term challenges and offering possibilities for metropolitan and city-regions within the larger context. After all, exploring common spatial strategies will improve the sustainable regional competiveness. Metrex offers a wide cooperation network to undertake this kind of project and makes it easier to find partners. Stockholm Region and Helsinki-Uusimaa Regional Council together with the City of Helsinki are the lead partners of the project. Gothenburg, Riga, Oslo, Tallinn and Warsaw-Mazovia are the participating members.

THE METREX NETWORK

With around 50 members from metropolitan regions or areas, METREX provides a platform for the exchange of knowledge, expertise, experiences concerning metropolitan affairs and joint action on issues of common interest. METREX works as a partner of European Institutions, the research community, governmental organisations and other networks and contributes the metropolitan dimension to policies, programmes and projects on a European scale. ■

VISION AND FRAMEWORK

The Vision and Framework for the NBS 2050 promotes spatial and social cohesion and better connectivity between its city-regions. This consists of inter-city connections by a transnational network of public rail both radially and transversally. It also aims at being economically vital, urban in character, dynamic and innovative; spatially and socially



cohesive and polycentric in structure; growing in a carbon neutral and energy efficient manner; having green city-region networks as an important element of the regional structure and offering attractive and diverse environments. The working methodology is based around Expert group meetings at Metrex conferences twice a year. Thematic discussions with a spatial planning approach all follow the same step-by-step work plan. The '*drivers of change*' is an approach which helps to analyze the spatial implications of a changing world. The key drivers, such as population and economic growth, create manifest changes to the spatial planning process, which translates physically onto the ground in terms of housing development needs, or on the required workplaces. In conclusion, these structural drivers provide a dimension as to how change may come about in the Nordic and Baltic city-regions and what needs to be done about it spatially, throughout planning. It provides the direction of change.

- '*Key challenges*' centres upon the problems of rapid growth, urbanisation and urban sprawl, together with climate change.
- '*Strengths and Weaknesses*' provides an analysis in the long term to 2050.
- '*Future Scenarios*' looks at creating a synthesis of a single scenario and a long-term vision for the Nordic Baltic Space as a whole. The key is to find out whether the Nordic and Baltic city-regions have a similar or divergent point of view towards a long-term vision. Discussion concludes with the need to make a 'Joint Set of Intentions' that can show how the Nordic Baltic Space can act as an integrated group of cities and regions in order to achieve better spatial cohesion across the macro-region.

A JOINT SET OF INTENTIONS

The Nordic Baltic Space city-regions are finalising a set of policy options that will be the means to achieve its Vision 2050. They include promoting the Trans-European Transport Network to prioritise Rail Baltica from Helsinki to Warsaw and Berlin via the Baltic States and a High Speed Train between Stockholm and Copenhagen. It aims at reducing carbon emissions and improving economic vitality between the city-regions. The promotion of polycentric city-regional structures will help create synergies of employment clusters and provide greater spatial cohesion between and within metropolitan areas. The policies will also guide the Nordic Baltic Space to work together in developing investment in alternative sources of energy, such as wind turbines and solar energy, in order to become carbon neutral. ■

From parking lot to popular spot: The Pearl Street Triangle in Brooklyn's DUMBO neighbourhood was one of the first plazas of the NYC Department of Transportation's Plaza Program, created as part of a community-driven process spearheaded by principals from Brooklyn-based real estate and urban design firm, TOTEM.
PHOTO: TOTEM, totembrooklyn.com, @totembrooklyn

TACTICAL URBANISM: SMALL-SCALE PROJECTS, PARADIGM SHIFTS?

In Bogotá, New York, Amsterdam, Paris and elsewhere, the future is being invented from the bottom up: connected, agile and creative, citizens are taking action, experimenting with short-term, small-scale and inexpensive solutions. Public bodies are increasingly building these tactical participatory approaches into their strategies. Is this a passing fad or the sign of a deeper change?

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Paul Lecroart, Senior Urbanist, L'Institut Paris Region

The art of building cities sometimes borrows from the art of war. The concept of "strategic planning" appeared in the 1990s as a coordinated response to the urban crisis that arose from de-industrialisation: it involves bringing public and private stakeholders to the table to share their analysis, their vision, and their priorities with a view to concentrate investments in projects that are most able to catalyse regeneration.

Strategic plans have helped Barcelona, Birmingham, Copenhagen, Lyon, Turin and Pittsburg to bounce back. In Bilbao, the famous "Guggenheim effect" can be seen as a tactical plank of a strategy carried out since 1992 by the association *Bilbao Metropoli-30.* Today, strategic thinking tends to form part of the development process of long-term master plans.

But however strategic they may be, plans and major top-down projects are slow to come to fruition in local neighbourhoods and respond poorly to the expectations of the people who live there. The turn of the 21st century in Europe and the USA saw activist citizens re-appropriating spaces abandoned by the car-oriented or post-industrial city. Their goal was to reactivate neglected areas by stimulating new modes of use through temporary occupation, on-site experimentation, and festive events. The principle was to develop small-scale, rapid, lightweight, low-tech initiatives. The ingredients were design, a dash of humour...and social media skills.

CITIZENS NO LONGER WANT TO WAIT FOR ANOTHER "PLAN 2030" TO SEE THEIR CITY CHANGE FOR THE BETTER

TACTICAL ACUPUNCTURE

This "pop-up urbanism" borrowed from the "urban acupuncture" used in 1980-1990 in the favelas of Curitiba by the city's mayor, Jaime Lerner: "*Just as in the medical approach, it revitalizes an area through a simple touch of a key point: this intervention will trigger positive chain-reactions, helping to cure and enhance the whole system*"[1]. Dubbed "tactical urbanism" by Mike Lydon in 2012, "*Short-term action for a long-term change*"[2] is also part of the history of urban activism.

In the early 2000s, cities and metropolitan areas seized upon the potential of these methods to green their streets or stimulate modes of use that are more creative than parking a car. After the crisis of 2008-2009 and the reduction of public budgets, the need to act fast and cheaply prompted local authorities, residents and "urbartists" to group together in order to innovate in a wide range of fields.

A LOOK BACK AT SOME PIONEERING EXPERIENCES

Bogotá, Ciclovía

Bogotá was the first city to temporarily close major traffic arteries as an urban policy tool: every Sunday 120 km of boulevards were given over to 1 to 2 million cyclists, rollerbladers, joggers and pedestrians, turning the city into a gigantic park. Initiated by a collective in 1974 and managed by the municipal sports and leisure department since 1995, *Ciclovía* spearheads an eco-mobility and public health strategy that has been copied in over 60 cities including Buenos Aires, Cape Town, Lima, Los Angeles, Melbourne, Mexico City, Miami, Rio de Janeiro, Santiago, São Paulo...and Paris.

Los Angeles, River Revitalisation

When poet and activist Lewis MacAdams founded the association *Friends of the Los Angeles River* (*FoLAR*) in 1986, he knew that revitalising the Los Angeles River was an almost impossible task: channelled, polluted and inaccessible, this 80 km waterway, running through 14 municipalities, was choked with rubbish. With a handful of volunteers, he launched cleanup campaigns and small-scale projects, and raised money to fund legal action, surveys, and lobbying. In 1996 this resulted in County approval for a restoration masterplan; in 2007, the city adopted the *LA River Revitalization Masterplan;* in 2014, 1.1 billion dollars was set aside for the restoration of the river's ecosystem and a riverside urban and recreational development

Some international experiences of tactical urban planning that have influenced other cities: *Ciclovía* in Bogotá (top); San Francisco, *Pavement to Parks* (bottom, left); Montreuil, "*la voie est libre*" (bottom, right).

programme. *FoLAR* changed the way Angelinos perceived "their" river, and inspired similar projects in New York (*Bronx River Greenway*), Seoul (*Cheonggyecheon River Restoration*) and the Paris Region (*Amis de la Bièvre*).

Amsterdam, Blijburg Beach

In 2003, the first new housing developments in the IJburg district were built, at the same time as the tram line connecting them to the city centre. The problem was that nobody wanted to live in the "new town", planned to house 45,000 people, built on windswept and sandy artificial islands. As a tactical solution, the city laid out a beach for the summer with a beach café. The place quickly became a hip venue for Amsterdammers and kick-started the sale of the first plots and apartments.

San Francisco, Pavements to Parks

In 2005 three San Francisco designers (*Rebar group*) temporarily occupied a parking space with a "micro-park" (pallets, synthetic grass and a bench!). "*Change is too slow in the administrations, so we decided to do it ourselves,*" explains Matthew Passmore, a member of the trio[3]. When it was posted on line, the initiative earned a lot of praise. In 2011, *Park[ing] Day,* an international event devoted to the reappropriation of city streets, resulted in 935 initiatives in 162 towns, including about 100 in the Paris Region. It inspired the augmented public space pro-

PAUL LECROART/L'INSTITUT PARIS REGION

HONG KONG, *ENERGIZING KOWLOON EAST:* TACTICAL THINKING IN ASIA

Kai Tak, Hong Kong's legendary former airport in the heart of Kowloon East (KE), is being converted into a new metropolitan centre (CBD2*). Created in 2012 by the government, *Energizing Kowloon East Office* (*EKEO*) manages the transformation of Kowloon East, using tactical methods as "place-making" tools on abandoned sites.

"*EKEO stimulates the evolution of the industrial fabric of Kwung Tong through modest initiatives that offer quick wins for all*", says Senior Place Making Manager Margaret Chan. Examples: the *Walkable KE* initiative dealt with 65 pedestrian crossings, *Energizing Hoi Bun Road-Green* gave "makeovers" to a dry weather flow inceptor, a pumping station and a refuse collection point, and Green Trail renovated small areas so that people could enjoy them.**

Launched in 2013, *Fly the Flyover* aimed to convert the gloomy underside of a motorway viaduct into social and artistic venues. In 2017, a call for projects resulted in re-energising three sites by installing shipping containers housing an art gallery, a performance stage, food huts, an urban farm, etc., managed by an association. Through low-cost initiatives, EKEO points to future transformations and allows residents to enjoy otherwise unoccupied spaces within a major urban planning project. ■

***Second Central Business District.**
****Interviewed by the author in Hong Kong, 1 June 2018.**

grammes *Pavements to Parks* and *Street Plazas* in San Francisco (70 interventions in 10 years) and the *Parklets* programme in Paris (2019)[4].

New York, Plaza Program

Launched in 2009 by Janette Sadik-Khan at the New York Department of Transportation, the tactical remodelling of Times Square was a real shock: in a single night, Manhattan's main traffic hub was transformed into an open-air lounge using paint, flowerpots and deckchairs (the furniture they planned to use was not ready!) It was an immediate success: "*People flooded in from all over. They weren't talking about Broadway being closed; they were only talking about the deckchairs!*"[5]. Pedestrians and cyclists had a comfortable, safe space to enjoy, and traffic was more fluid. Tested over a period of 6 years, it prefigured the final redevelopment programme that took place in 2015. Applied throughout New York, the same principle has made it possible to inexpensively reclaim 60 small squares in seven years. It has since been adopted in Paris ("*Réinventons nos places*"), Montreuil and other areas in the Paris Region.

Pioneers of the Grand Paris[6]

By proposing in 1994 to restore the banks of the Seine between Issy and Sèvres and encouraging different modes of use (gardening, exhibitions, walks), the urban ecology association *Espaces* initiated a process which in 2010 led the Hauts-de-Seine council to abandon an expressway

project. It was replaced by a landscaped boulevard that is better integrated into the site (*Vallée Rive Gauche,* opened in 2018). Was the Sunday closure of the *Georges Pompidou Expressway* by the Mayor, Jean Tibéri, in 1995 a tactical move? In any case, it opened the way to the pedestrianisation of parts of the riverbank, first in the summer of 2002 with *Paris Plages,* then permanently (but reversibly) in 2013-2017 with the *Parc des Rives de Seine.* From 2009 onwards, the annual festival "*La voie est libre*" on the A186 motorway in Montreuil was designed as a co-construction tool helping to develop an alternative urban future for the Hauts-de-Montreuil area.

EXPERIMENTAL URBANISM

Tactical participatory approaches focus on reinventing "public goods" (streets, squares, motorways, rivers). They resonate with pop-up cultural initiatives on privately owned brownfield sites that have appeared since 1990 in cities like Berlin, Leipzig, Amsterdam and Paris, opening the way, since 2010, to what is sometimes called "transitory urbanism"[7]: the activation of the time lapse between initial occupation (which is often industrial) and final development. Such transitory uses can also enrich planning projects.

Why are these approaches emerging today as fully fledged planning tools?

First of all, they provide a response to a kind of planning crisis, where citizens perceive planning as too vertical, too heavy, and too slow to change the urban environment, in a context where lifestyles, practices and the economy are constantly evolving in countless different ways. This explains why some projects are already conceptually obsolete as soon as they are completed. In addition, the ability of major planning projects and "turnkey" public-private initiatives to respond to the "here-and-now" aspirations of city-dwellers, especially underprivileged residents, is being called into question.

Second, there is a need to test innovative solutions. Running counter to the technocratic urbanism of high-rise estates and urban freeways and the set-in-stone urbanism of investor-led master plans, the emphasis is on a collective urban development process open to social change. In the context of current environmental, social and technological transitions, tactical collaborative urbanism proposes an experimental method that involves seeking practical and reversible solutions fostering more sustainable development[8]. Initially launched by individuals with high social capital, these methods are finding their place within the ordinary array of urban policies combining vision, strategy, tactical approaches, and large- and small-scale projects.

Last but not least, we have the increasingly rapid circulation of experiments and models. City-dwellers are being granted "control" over modes of use within their living environment. We see that they are able to imagine possible futures for their city, as the city planner Zef Hemel has shown with *Amsterdam 2040*[9]. Thanks to social networks, they can rapidly mobilise resources to test ideas on the scale of a neighbourhood, a valley, or even an entire region[10]. Will this distributed collective intelligence, fuelled by in-the-field experience, on-site experimentation, collective workshops and real-time shared visualisation tools, transform us into what the architect Alain Renk calls the "*7 billion urbanists*"[11]? ■

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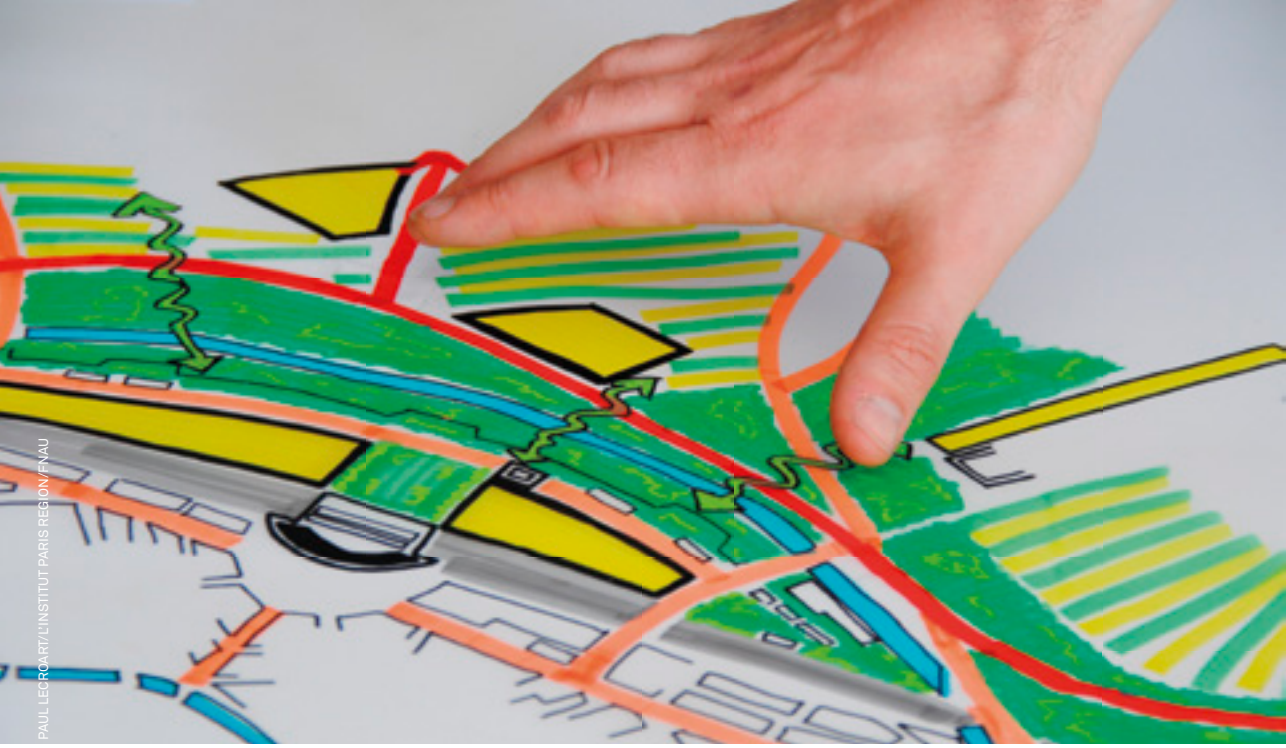

PAUL LECROART/L'INSTITUT PARIS REGION/FNAU

LEARNING TOGETHER: INTERNATIONAL PLANNING **WORKSHOPS**

Intelligence is collective, and urban planning is fundamentally collaborative. When faced with a complex, multi-facetted problem wouldn't a sectorial solution be meaningless? This principle lies behind the idea of participative planning workshops. These temporary creative spaces of intercultural dialogue and co-design are invaluable instruments allowing cities and professionals to learn from each other in international contexts.

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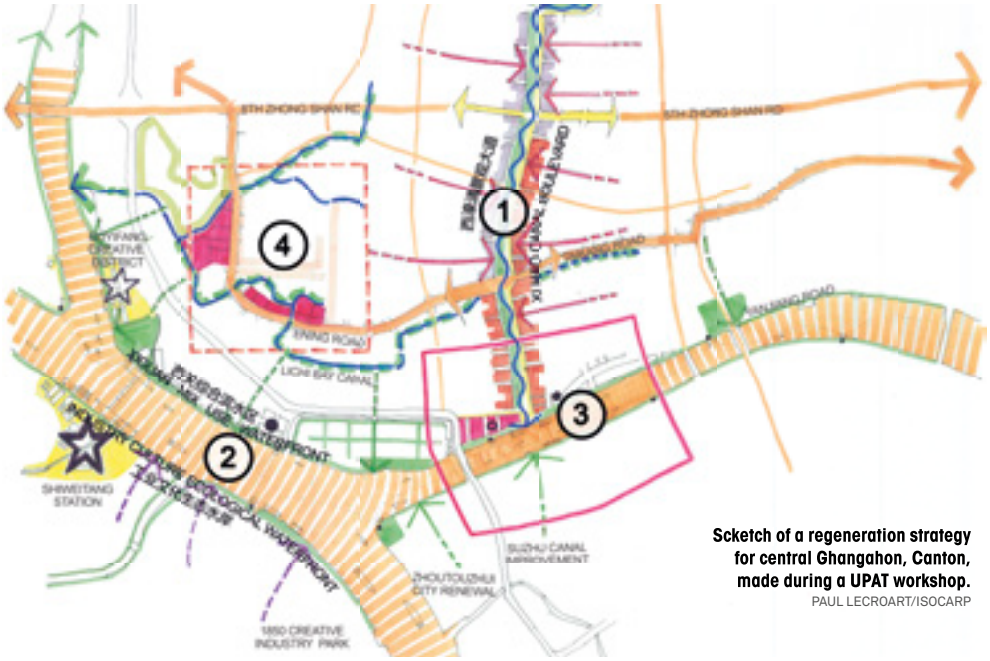
Paul Lecroart, Senior Urbanist, L'Institut Paris Region

Two ingredients lie at the start of the process: an area –of whatever size– in need of transformation; and a development problem whose solution is not immediately clear to the client. Why not bring together, for a short period, a team of planners and designers who can take a fresh look at the site and the problem in hand? Their mission: to rephrase the questions and freely suggest innovative projects to help council officials move forward in



Scketch of a regeneration strategy for central Ghangahon, Canton, made during a UPAT workshop.
PAUL LECROART/ISOCARP

ISOCARP'S URBAN PLANNING ADVISORY TEAM WORKSHOPS

The *International Society of City and Regional Planners (ISOCAR'P)* has been running tailor-made workshops worldwide since 2004. For each Urban Planning Advisory Team (UPAT) workshop, a team of seven to nine professionals (a team leader, a team rapporteur, senior and junior planners) is set up for the occasion. The team is tasked with formulating creative solutions and strategic advice to the host area, over a short period (5 to 7 days). On the last day, the team presents the results to the stakeholders, then drafts a report which is presented at the association's annual world congress (in Jakarta in 2019).
The aim of a workshop is to get off the beaten track and come up with simple, practical and original solutions that improve quality of life. These solutions, if selected, must be able to be implemented within five years. The workshops bring added value in complex situations that require seniority and experience, creativity and open-mindedness. They help raise awareness and make it possible to elaborate integrated spatial strategies, liveability trajectories, and ecological, social and economic approaches.
One of the 2018 workshops focused on Guangzhou (Canton) and suggested four strategic action areas to foster the regeneration of its historic centre (see above). ■

Martin Dubbeling, President of ISOCARP, the International Society of City and Regional Planners

To find out more: https://isocarp.org/activities/upats

their thinking. And what if that team were made up of professionals of all ages, with a range of different profiles (landscape architects, ecologists, mobility experts, artists, etc.) and from a variety of cultural backgrounds? Wouldn't the responses be even more enriching?
Different types of planning workshops exist, each with its own approaches, timeframes, and strengths[1]. In the French context, the *Urban Project and Landscape Club* workshops run by the French Federation of Urban Planning Agencies (FNAU) are based on two-and-a-half day sessions. The short length of the sessions creates a creative tension that catalyses solutions and grabs the attention of council officials around a single story told at different scales. The IAU (now L'Institut Paris Region) has developed similar formats internationally with one-week sessions involving local experts. The sessions of *Les Ateliers* (see box) typically explore four different scenarios relating to a single question (one per team), fuelling discussions that take place

LIFE IN METROPOLITAN AREAS IN THE 21ST CENTURY: A WORKSHOP OF *LES ATELIERS*

The format of *Les Ateliers* workshops has proven very successful since 1982 with ninety-five sessions held in dozens of places, including Paris (Île-de-France), Hanoi, Irkutsk, Tokyo, Porto Novo, Vitoria, Changzhou and Ouarzazate. Their impact can be huge, such as the change of location for the 2010 Shanghai Universal Exhibition.

***Life in Metropolitan Areas in the Twenty-First Century session:* prepared by 100 experts over a period of two years, the 2018 Workshop in the Paris Region brought together twenty young professionals of thirteen nationalities. What they produced amazed the jury, who wondered: "*What have we missed out on so that these young people can tell us so much?*" The four teams looked into climate change, technological revolution and urban megacity growth worldwide through the prism of metropolitan lifestyles.**

Food represents a third of greenhouse gas emissions, so the *Food and the city* team reflected on the agricultural model and changing what we have on our plates. For the *Seeds* team, climate change means the future has been cancelled and we must change our lifestyles. Faced with such a diverse range of visions, interests, and territories, why don't we start from the bottom by sowing seeds? The *Micropolis* team focused on metropolitan concentration and on social exclusion in the Paris Region. What matters, the team said, is connecting the larger geographical region with local community participation. The *Time Revolution* team explored the subject of work. What if we worked six hours a day, in different ways, with less commuting? What if, instead of running after work, it was work that followed us around? ■

Bertrand Warnier, founder of *Les Ateliers*, International Workshops of Planning and Urban Design, Jean-Michel Vincent and Solenne Sari, coordinators of the 2018 Workshop

To find out more: https://ateliers.org/en

among members of a high-level panel of international and local experts. The Urban Planning Advisory Team Workshops of ISOCARP (see box) leverage a diverse range of profiles within one team, whose members work together to build a single narrative with variations.

However, these workshop studios share similar features:

- Their scope: opening up the field of possibilities; encouraging discussion with project clients; changing local perceptions; suggesting strategies and tools for taking action;
- Their principles: voluntary participation; collaborative intelligence; cross-disciplinary dialogue; creative freedom;
- Their methods: reframing questions; multi-scale thinking; transparent discussion and real-time interaction with the client (typically a public authority); hand drawing as a favoured means of expression (computers are switched off, at least in the first phase).

From the client's perspective, the benefits of workshop studios are obvious: in addition to the local debate they help to fuel, they legitimise council officials and position the area in question. From the participants' point of view, dealing with new issues, or old ones raised in different terms, broadens the scope of their experience. Some cities, such as in China, may use these workshop formats to "buy" international expertise they do not have and to promote their own models. But overall, the circulation of concepts, ideas and solutions for sustainable development takes place from South to North as much as from North to South (if these expressions are still meaningful today). They allow us to learn together. ■

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WHAT WILL DEFINE **CITIES IN 2050**?

From the "car-oriented city" to the "sustainable city", and now the "smart city": recent urban history shows us that technological progress and homogenous social demands have had a great impact on the creation of urban models. What if the future of western cities will depend more on individualistic and consumption-based trends?

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Jean Haëntjens, Economist and Urbanist, Urban Strategy Expert

Urban development is the result of a series of opportune adaptations to circumstance. The history of cities shows that four families of factors[1] have often driven their transformations:

- specific constraints (ecological, sanitary, economic or political) that have caused a paradigm shift
- new technologies (concrete, lifts, trains, cars, etc.)
- marked changes in aspirations and lifestyles
- a new system of actors, bringing together political actors (the State, local authorities), dominant economic actors, and citizens/city-dwellers.

The car-oriented planning that dominated the second half of the twentieth century effectively illustrates this process. It was admittedly motivated by the spread of a major technological tool (the car) but it also struck a chord with rising individualist and consumerist aspirations (the consumer society), the influence of dominant economic actors (road and oil lobbies, retail) and the relative inaction of local and national authorities in response to these private actors. The consequence of this process was urban sprawl, which gradually made car use indispensable for most of the population. It also helped turn citizens into "consumers of services"[2]. Once involved daily in the life of a compact city that provided them with work, social bonds and acknowledgement, they began living their different lives in several less and less connected spaces. This conjunction of factors was so powerful in the late 1990s that nothing seemed able to stop western urban models aligning with the North American standard, which David Mangin dubbed *la ville franchisée:* the franchised city[3].

From 1995-2000 onwards, a response began to emerge focusing on the "sustainable city" paradigm, seeking to counter the main forces driving car-oriented cities. Local bodies reasserted their authority, in most European countries but also in certain North American cities, rolling out multiple initiatives and technological innovations designed to restrict car use and reclaim city centres. They were supported by citizens who were aware of the environmental limitations of the car-oriented city and wanted to live differently. In many European countries, governments have supported this urban empowerment movement with institutional reforms. In the early 2000s, many planning professionals thought that the sustainable city, embodied by the first eco-districts, could assert itself as an alternative to the car-oriented city. The dream of the city of 2050 was all about bikes, trams,

Sidewalk Toronto is a large-scale experiment of a new "city" powered by data… owned by a sister compay of Google.

cable cars and "third places" buzzing with social innovations.

From around 2010, this vision gradually lost its mobilising potential. Although the sustainable city scored points in city centres, it did nothing to solve the problems of suburbs. In parallel, budget constraints in the wake of the 2008 financial crisis led several states (including France and the UK) to reduce the funding of local authorities. Major digital actors also invited themselves to the table, proposing the new paradigm of the "smart city", which brought a twofold promise. Not only would technology make it possible to solve the main failings of cities; it would also renew the democratic process by making communication between citizens and elected officials more transparent and fluid. The year 2017 heralded both the triumph of the "smart city" concept and growing doubts about those carrying it forward. The city of Toronto plans to let Sidewalk Labs[4] develop a site of 13 hectares as a part of a 325 hectare project site on the shores of Lake Ontario. At the same time, the Facebook/Cambridge Analytica scandal has cast a lasting shadow over the supposed virtues of digital democracy. The smart concept, bereft of its political promise, appears here in a less flattering light: that of a mere "city of digital services" addressing consumers rather than citizens[5].

Several urban paradigms are in the running for designing the cities of 2050. We have not heard the last of the "old-style" car-oriented city, which is even supported by recent official positions on climate change in the US. The sustainable city continues to move forward, especially in northern Europe, where several cities have committed to becoming "zero carbon" by 2030. The smart city concept still has its appeal, promising to reconcile the car-oriented city with the sustainable city with tools such as self-driving cars (whose ecological benefit is far from being proven). In Asia, especially in China, the paradigm of a digital city under tight surveillance, closely controlled by state authorities, is starting to emerge. Finally, the poor, makeshift city, which is sometimes a source of low cost innovations, remains the standard model for several billion human beings. It should be added that different paradigms can coexist within the same urban agglomeration.

What will arise from this confrontation? To attempt to answer this, let us look again at the four main drivers of change.

SEPH LAWLESS – Sephlawless.com – FROM MY PUBLISHED BOOK ENTITLED: 'ABANDONED MALLS OF AMERICA: CRUMBLING COMMERCE LEFT BEHIND BY SEPH LAWLESS'

The car-oriented city needs to be radically rethought. An abandoned shopping mall in the city of Akron, Ohio.

- **Ecological or geopolitical disasters** will likely occur, but nothing allows us to state with certainty that they will have an immediate impact on mobility-related decisions and the organisation of urban systems. The argument of a "climate disaster foretold" has unfortunately shown its limitations, even as several American cities (New Orleans, New York) have been ravaged by climate-related phenomena.
- **Digital technologies** will clearly have many impacts on the way cities operate (modes of use, interactions between actors, behaviours) but, unlike the automobile, they seem unlikely to affect urban forms to a significant degree as Antoine Picon has shown us. They can be used to run driverless cars, self-service bikes, and driverless buses. The key fact, which has received insufficient consideration, is that technological progress has ceased to be mono-directional, and this applies to both energy and transport. While the car alone has dominated urban mobility over the last decades, the signs are that it will not be replaced by another single mode of transport, but instead by dozens of individual and collective solutions interconnected by physical and digital interfaces. Electricity to replace fossil fuel can be produced by multiple sources (solar, wind, biomass), which will eventually have to find their place in the urban environment.
- As far as **changing social aspirations** are concerned, we have to be circumspect when we consider the current demand for "civic empowerment". Another groundswell, observed by sociologists, is the individualisation of expectations, which leads city-dwellers to behave like service consumers. The city of 2050 will also have to take into account the diversity of expectations, allowing for generational, cultural, social and ethnic variables that will be difficult to address en bloc. In actual fact, the same city-dweller might behave, according to the circumstances, as a demanding consumer or a generous-minded citizen. Civic Techs will not resolve this ambiguity; quite the contrary, in fact. They have shown that they can be used

by turns to defend the general interest and the private interests of particular pressure groups.

- **A new system of actions.** Last but not least, the desire for civic engagement can be strongly activated (or discouraged) by the political offering. These different factors reveal a range of civic aspirations that is much more open than the "consumerist appetite" that drove the development of the car-oriented city.

Western cities in the 2050s will thus likely be determined less by technological factors and uniform social demands than in 1960-2000. More leeway will be given to interconnected actors. The future of cities will thus depend more on relationships of power and vision that will develop between political actors (states, local authorities), citizens, and key economic stakeholders. The latter are very likely to be the giants of the digital economy or their successors, who all take an active interest in "urban markets" (transport, housing, logistics, services). They support a vision of urban challenges that is far from coinciding with that of the traditional "political city", run by an elected mayor and embodying a long-term vision of public interest. What the smart city offers is a digitalised city of services, a real and virtual shopping mall responding in real time to the demands of users and controlled by algorithms. Confrontation between these two visions of the city is thus inevitable and is, in fact, already happening (see the recent standoff between London and Uber). Its outcome will partly depend on alliances set up between the two camps. Some states, like those in northern Europe, will most likely continue to reinforce the powers and competencies of their local authorities, which they see as essential intermediaries able to drive ecological transition. Others may, on the contrary, accept the principle of digital majors running their cities. The latter may possibly partner up with those who helped to create the car-oriented city, as shown in France by recent partnerships between Amazon and Casino and Google and Auchan.

TWO VISIONS OF THE CITY WILL COLLIDE: THE "POLITICAL CITY" AND THE "SERVICE CITY"

Whereas the second half of the twentieth century was marked by the undeniable convergence of western urban models, the next three decades will probably see deepening divergences. They will relate to systems of mobility, urban forms, relationships between actors, and the ultimate objectives of urban strategies (the "political city" or the "service city").

In, parallel, emerging countries will be spurred to invent their own models, in particular to cope with the arrival of two to three billion new urbanites. They will not necessarily use the same technologies as rich countries (e.g. China, with its 200 million electric scooters), they will not respond to the same aspirations, and relationships between stakeholders will doubtless be different, especially in the many countries where democracy will still be fragile or non-existent. ■

FURTHER READING

COMMENT LES GÉANTS DU NUMÉRIQUE VEULENT GOUVERNER NOS VILLES
Haëntjens Jean, Rue de l'Échiquier, 2018.

SMART CITIES: A SPATIALISED INTELLIGENCE
Picon Antoine, Wiley, 2015.

1. Jean Haëntjens and Stéphanie Lemoine, *Éco-urbanisme,* Écosociété, 2015.
2. Olivier Piron, *L'urbanisme de la vie privée,* Éditions de L'Aube, 2015.
3. David Mangin, *La ville franchisée,* Éditions Parenthèses, 2003.
4. Company owned by Alphabet, just like Google.
5. See the January 2018 issue of Urbanisme magazine entitled "*Qui gouvernera la smart city ?*".
6. See Antoine Picon, *La smart city. Théorie et critique d'un idéal auto-réalisateur.* Éditions B2, 2015.

THE **FUTURE OF GLOBAL CITIES**: REACTION AND REFORM

This volume of *Les Cahiers* comes at an important moment in the story of globalisation and urbanisation, and their progeny known as the global city. In the past 10 years, more or less since the global financial crisis and its repercussions, a debate has emerged about whether the superstar cities of the 1990s and 2000s (New York, London, Paris, Tokyo, Hong Kong, and Singapore) are not in fact a model of failure rather than success.

****

Prof Greg Clark and **Dr Tim Moonen,** The Business of Cities, University College of London

Despite a prior recognition that these cities played important roles as hubs of a globalising economy and accelerators of productivity through their roles as HQ locations, advanced services providers, and magnets to cosmopolitan talent, some scholars and media commentators have more recently emphasised the trials and tribulations of today's global city. These include the inflation in the housing and real estate markets of such cities, the centripetal force they appear to play in their national economies and labour markets, their role in the 'financialisation' of real estate and other assets, and their 'metropolitan elites' that increasingly seem to be 'citizens of anywhere' rather than 'somewhere'. These attributes of the global cities are now cited as proof of the instability and likely inexorable decline of the global city model. They are often also invoked to argue for urgent reforms in order to prevent other distorting global cities from emerging.

The result is there is now a more open and sustained debate about the advantages and disadvantages of global cities, and more comparison of systems of cities that have them and those that do not.

In our book *World Cities and Nation States*[1] we attempted to address these debates. We developed a formula that showed the reciprocal 'input and output' flows between world cities and their national economies, arguing for a more evidence-based discussion both of what global cities contribute to national economies and how a reforming agenda might be developed to better optimise the role of world cities in respect of their wider national systems of cities.

All of this means that the future of global cities is open[2]. They may prove to be economically necessary but politically difficult, or socially important but environmentally damaging.

MORE GLOBALISING CITIES, AND MORE WAYS OF GLOBALISING

Looking forwards we can observe three dimensions of how the future of global cities might evolve over the next 30 years.

KACPER KOWALKSI/PANOS-REA

In Jiangyin, China (Jiangsu Province): towards new relationships between the large cities and their regional hinterlands?

By mid-century there will almost certainly be many more globalising cities. Despite the current challenges on multi-lateral trade agreements there is underlying growth of cross-border flows of products, services, capital, people, and ideas all supported by emergent technologies coupled with geo-spatial development that is driving demand. Although 'policy' on issues like global trade, aid, and migration may be in a negative populist cycle, there are strong thrusts towards ongoing and deepening global interdependence. This interdependence is equipping more cities with the assets and know-how to acquire the key traits of metropolitan areas that successfully globalise [3].

It already makes little sense to think about the future of global cities as simply being about more cities that do what New York and London and Paris and Tokyo do. Working with JLL Cities Research Centre we have observed at least 10 types of global city that each share common paths and common imperatives based on their distinctive roles in the global economy.

THE GLOBAL CITY MODEL IS UNDER PRESSURE: IT NEEDS TO BE REFORMED

While the established group of six or seven cities may still play certain 'command and control' roles in the global economy, a second group of cities – including Sydney, San Francisco and Toronto – are themselves acquiring the trust of global capital and the breadth of talent pool to start contending for more high-order functions. These cities have their own different set of shared imperatives, noticeably in terms of infrastructure 'catch up', and to achieve better borrowed scale through improved regional connectivity.

Other groups of global cities are also emerging much more clearly in these current years. The specialists in science and technology – the Tel Avivs and the Austins – are having to supplement their innovative edges with a widely appealing lifestyle and a diverse cosmopolitan culture. The beacons of compact urbanism and high quality public services – the likes of Vancouver and Copenhagen – face challenges bringing forward large sites to serve future growth. And the centres of institutions and diplomatic influence have dilemmas

about how to diversify and leverage their inherited status to achieve visibility in other niches. We can also spot common threads among the emerging megacities and the diversifying commodities hubs, among others. Many more types of globalising city will emerge in the decades to come, each contending for particular kinds of contested activity that will require an effective model and identity in order to grow and sustain these roles.

A REFORMED MODEL OF GLOBALISATION OF CITIES

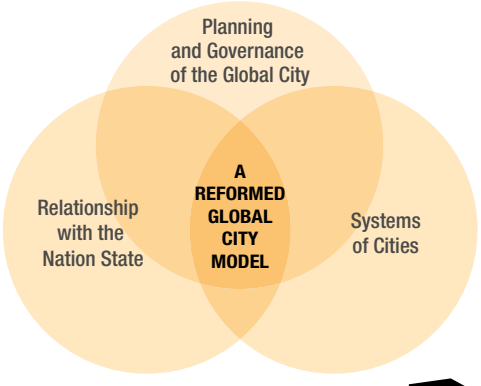
Looking ahead we can observe three kinds of pressure to reform the global cities model in future.

Firstly, reforms in how global cities are planned, governed, and led are needed in several areas. These will include infrastructure, spatial planning and housing policies where market-led solutions have been ineffective in tackling the inflationary effects of financialisation of housing assets. This is likely to lead to renewed interest in new social and public ownership models for housing and for much larger-scale solutions to housing supply that will involve more ambitious spatial development initiatives, possibly involving employers much more directly in housing provision. We can expect a strong push for global cities to adopt more proactive economic inclusion policies and incentives. Global cities will increasingly seek to become smart cities with systems that are more interoperable, and in doing so they will make much wider use of their scale advantages through digital platforms that serve transport, energy, food and social services.

Secondly, relationships with Nation States and their Governments will also be a focus for reform. In more centralised countries where National Governments are highly engaged there will be increasing deal-making between the leading cities and the nation states that essentially 'trade' for flexibility and resources of these cities in return for greater commitment from those cities to territorial solidarity. These world cities will find that they must demonstrate their benefits to the nation as a whole and take much more active steps to leverage their own advantages on behalf other centres, cities and regions. Cities with more remote relationships to National and Federal Governments will need to build wider coalitions to promote policies that are conducive to their success. The more self-governing global cities will continue to advance but will need to address their neighbours much more as they grow.

Thirdly, global cities will be required to recognise their responsibilities to their wider system of cities and regions. They are part of systems at sub-national, national, and indeed continental levels that will bring opportunities but also an onus for more active partnerships with neighbours and the wider network of cities which all play diverse and distinctive roles. The relationships between globalising cities and rural areas will have renewed focus. The opportunities brought by new technologies to de-concentrate, unbundle, and dis-agglomerate global cities will either be the subject of careful planning or will be chaotic processes, perhaps leading to disputes and conflicts. There will be creative potential both to reshape global cities and their economies and internal systems, and to re-engineer their relationships with other parts of their territorial framework.

DRIVERS OF THE FUTURE
OF THE GLOBAL CITY



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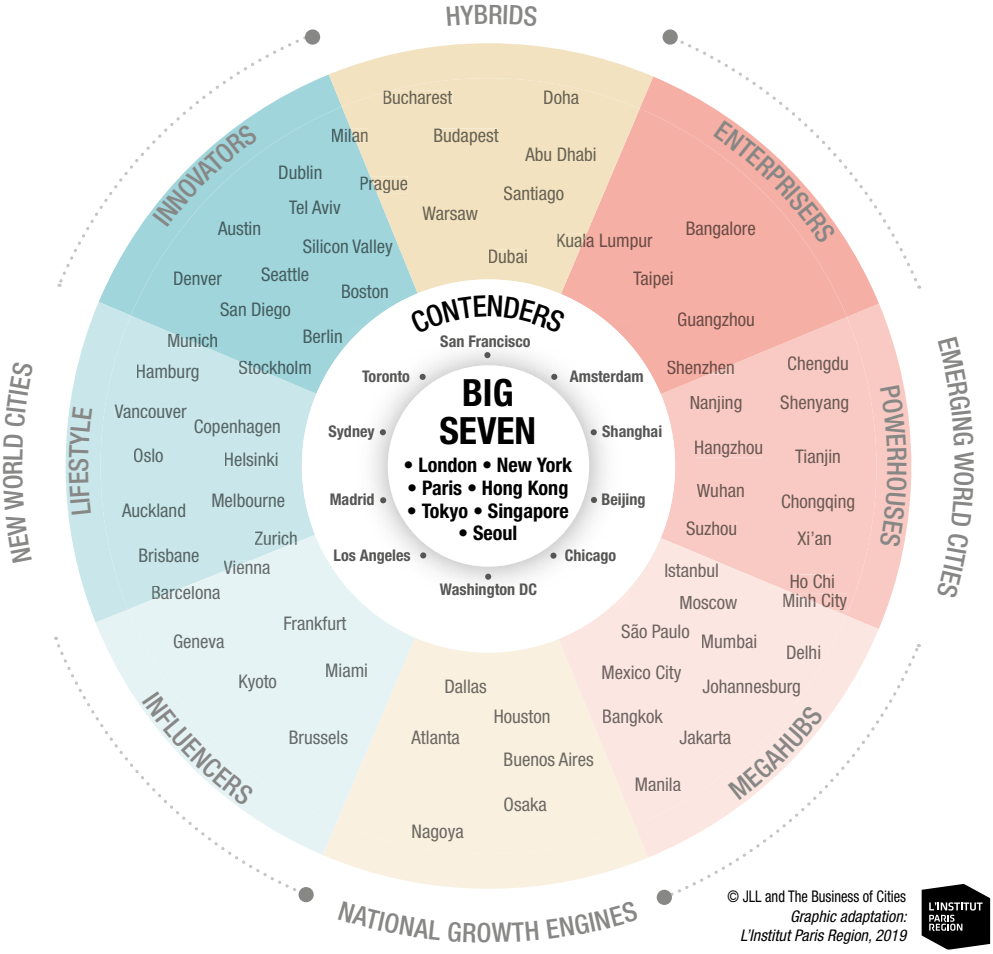
Source: T. Moonen and G. Clark

TYPOLOGY OF WORLD CITIES



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For these essential reforms to become reality, global cities will also depend on progress in other areas: strides forward in the metrics and 'science' of cities; better networking to fill the gaps in global governance that may emerge; and a more defined equilibrium with the world of business that now seeks to become more involved in both the leadership of global cities and in promoting a wider network of globalising cities.

The cycle of reform has begun in many countries but is largely incomplete. How far will these reforms go? Will they find a way to reap the advantages of the global city model while also demonstrating better outcomes on territorial solidarity and sustainability? This will determine whether the idea of global cities will retain its momentum and support or whether it ultimately comes to be seen as a passing phenomenon of the late 20th and early 21st centuries. ■

1. *World Cities and Nation States*, Clark & Moonen, Wiley, December 2016.
2. *The Future of Cities: Global Review*, Moir, Moonen, Clark, UK Gov., 2014.
3. *10 Traits of Globally Fluent Cities,* International Edition, Brookings Institution, 2014.

OPINION

CAROLINE MAUFROID

"STORM WARNING FOR LARGE CITIES!"

Patrick Le Galès, Research Director at CNRS,
Dean of the Urban School at Sciences Po, Professor at Sciences Po,
Fellow of the British Academy

These *Cahiers* highlight a kind of schizophrenia in large cities, which are torn between competitiveness and eagerness to achieve a more inclusive model. Do you share this observation?

Patrick Le Galès I'd say it's more a case of the fundamental contradiction in urban development: cities try to organise economic development, attract populations and investments and foster interactions between different groups, but at the same time there have always been significant inequalities in cities, especially in periods of growth.

We are now able to perceive this phenomenon more sharply, because cities play a more important role than before in structuring and organising contemporary societies. Major cities are concentrations of social and political phenomena. But if these contradictions are exacerbated in the urban age, it is because they play a more significant role in the creation of wealth and the organisation of relationships between social groups, rather than because states are playing a somewhat less prominent role in redressing balances.

Large cities remain key environments in which populations can gain access to collective assets, health and education. An enlightening recent study carried out by Raj Chetty[1] in the United States shows that more than ever before cities are acting as social elevators. His investigation shows that, in the last thirty years, the chances of a child from a blue-collar background ending up in an executive role are increasingly linked to whether or not they live in a city. The major problem in the USA is that cities are becoming more and more inaccessible in terms of housing, at least in the twelve cities that account for most American wealth and where upward mobility is strongest. France Stratégie carried out a similar survey in France. In a number of countries, life expectancy is significantly greater in cities than in rural areas. For example, it is generally decreasing in the USA but increasing in New York and Los Angeles.

DESPITE THEIR MULTIPLE PROBLEMS, CITIES ARE STILL (ACTING AS) SOCIAL ELEVATORS

It is nonetheless true that the dark side of metropolitanisation is growing in strength. Problems of pollution, poor maintenance of infrastructures and investments that fail to respond to needs are on the rise. These contradictions are real: the larger cities are, the more complex their ability to organise the production of collective assets becomes. By the same token, the more economic development there is, the more people they attract and the wider the income gap becomes.

So large cities now really do share a common trajectory?

P.L.G. Yes, the hypothesis this comparison leads me to make is that, despite their specific characteristics, these contradictions are becoming major issues in all of large world cities.

In Africa, in Lagos for example, we see business districts that are more modern than those in major northern cities, as well as slums. The contradiction is stark, but the problems are not all that different in Lagos and Los Angeles: transport, facilities, the attraction of populations, the cohabitation of different groups, the circulation of capital, the production of public assets... But the issues in Lagos are increasingly different from those found in the rest of Nigeria.

In reality, we are starting to think that an urban policy is taking shape and, in a way, becoming unified. The book *Seeing Like a State*[2] showed how the state both conceives of and transforms society. By analogy, we can say that we are witnessing the emergence of a world that is *seeing like a city*. Large world cities broadly share the same problems, and this points to a common political agenda. Solutions and strategic plans are exchanged, for example. More and more large firms are specialising in the urban environment (telecommunications, construction, etc.). There's a "*world of the city*" that is starting to be well integrated on a global scale, with an important role played by corporate strategies, the World Bank, international consultants and researchers. This isn't just the circulation of ideas, it's also a kind of appropriation. We can see it in the field of transport, for instance, with bike sharing services and Bus Rapid Transit (BRT) systems. And such transfers are not only happening from North to South: they can start to be developed in Latin America and Asia and later on be adopted in London and Paris. Cities and states have different processes and methods: in cities they are more horizontal and more often negotiated between different vested interests.

A "WORLD OF CITIES" IS APPEARING, WIDENING THE GAP WITH THE REST OF THE WORLD

But isn't there a range of very different metropolitan models?

P.L.G. There are certainly differing variables. If we wanted to establish metropolitan typologies, we'd probably have to mix together economic variables such as wealth and productivity, and political variables, which would allow us to assess modes of governance. And the time factor would also have to be taken into account.

Typologies are often too static and take no account of medium-term changes. For example, Los Angeles has always been described as a city that's very different from the rest of the world. But what has the city developed over the past thirty years? A cathedral, cultural facilities, redesigned squares. Its leaders are investing in public transport and increasing the density of the urban fabric. Urban trajectories also help us to see how things converge. This is what our work on São Paulo and Mexico City has shown us: the problem is not that they are not comparable to Paris and London, it's just that there's a time lapse.

Conversely, cases that are more directly comparable demonstrate fundamental divergences. Will London move closer to the Paris model by regulating property investment, as its mayor has announced? Or is it more likely, given Brexit, that it will align itself with cities such as Hong Kong and Dubai, which specialise in a development model based on financial attractiveness?

It is interesting to observe changing trends that are guided by movements of concentration or, on the contrary, dissemination. Saskia Sassen hypothesised that global cities were the exception to the rule[3]. Her intuition on global cities was brilliant, but she was wrong to think that the process of globalisation would remain restricted to a select coterie of cities (New York, London, Tokyo). What does the future hold for the financialised city-model? Will it be concentrated in certain specific cities, with the others seeking an alternative model based on assertive regulation, or will it spread to a large number of cities?

"We need more comparative research programmes on large cities"

The limits to the development of knowledge on the trajectories of large cities must not be underestimated. For a long time we have had little research at our disposal because urban research is rarely comparative. Major differences exist from one discipline to the next. There has been extensive work in the field of critical geography, which is intellectually stimulating but has weak empirical foundations. What is primarily lacking is serious fieldwork.

In addition to this, subjects of study are sometimes poorly defined. A significant proportion of comparative discourse is produced by professionals specialising in strategies and urban planning, providing interesting material but leaving many aspects unexplored. There is a tendency to reduce investigations of the management of large cities to studies of the proper implementation of urban planning, whereas the latter is just one aspect of public policy. Such studies only tell us a very small part of the story of what happens in these cities. New Delhi, for example, is traditionally thought to be ungovernable, because urban planning is not implemented there: this is to ignore the existence of very important educational, social and even environmental policies that structure urban development. This is the focus of the research programme at Sciences Po entitled *What is governed and not governed in large metropolises?* (*WHIG*), which tends to show that large cities are increasingly governed!

Last but not least, it is clear that, because urban planners are so fascinated by what happens in cities and the relationships between them, they often exhibit a great deal of naïvety, or even a genuine lack of understanding, regarding the relationships between cities and states. These relationships nevertheless remain an essential element in the transformation of cities and go a long way to explaining their differences.

In response to this stark lack of knowledge, measurement, analysis and comparison regarding major world cities, knowledge, concepts and methods are, however, being recomposed. This is demonstrated in a recent book, edited by Bruno Cousin, focusing on comparison in urban research*. Michael Storper and I are trying to reconcile serious scientific conceptualisation with comparative empirical research. We are able to draw on work carried out at the Urban School at Sciences Po and, more specifically, by the *Cities are Back in Town* research group. This determinedly trans-disciplinary group includes economists, sociologists, political scientists, anthropologists, planners and geographers. Its core research, begun four years ago and set to last a decade, compares an entire array of public policies and governance issues in a group of cities: São Paulo, Mexico City, London and Paris. Our aim is to publish a book on each city, and we carry out comparative analysis, accumulating empirical research on a wide variety of subjects including networks of actors, business districts, utilities, corruption and so on. A second set of cities is also used for comparison, based on more targeted work on Istanbul, Dubai, Johannesburg, Manila, Beijing and Los Angeles. ■

*** Jean-Yves Authier, Vincent Baggioni, Bruno Cousin, Yankel Fijalkow, Lydie Launay, *D'une ville à l'autre, la comparaison internationale en sociologie urbaine,* La Découverte, 2019.**

With the benefit of ten years' hindsight, can we say that the financial crisis of the late 2000s sealed the fate of cities, confirming their dominant position in the geopolitics of space?

P.L.G. To my mind, the financial crisis merely confirmed positions that were already established. Movements, perhaps exacerbated by housing prices and inequalities, followed a trend that was already well under way. In a sense, what's new is that the decline of cities that were already in difficulty has been accentuated, and that cities that were already fragile have been pushed over the edge. The position of dynamic cities and large cities has been confirmed.

On the other hand, there may be some profound transformations over the next twenty or thirty years. It's reminiscent of 1865 in Europe, at the time of the Industrial Revolution and political revolutions. First, large cities are increasingly leading the way in the twenty-first century world, but they are also increasingly becoming its targets. They may well find themselves being destabilised by forces that challenge the cosmopolitan aspect of the urban environment. Might we, in thirty years time, see a turnaround that would put an end to this dynamic where large cities spearhead development? Second, technical progress might be overturned, whereas today artificial intelligence is still in its infancy. Third, in response to climate change, how can we produce common assets while managing scarcity and constraint? Fourth, we're still experiencing cycles where a huge number of people are moving around the world, perhaps in increasing numbers, while urban populations are growing. How can these very large cities with more and more diverse populations be governed?

LARGE CITIES ARE INCREASINGLY LEADING THE WAY IN THE XXIST CENTURY, BECOMING TARGETS.

If we lay all this end to end, we can say that "storm clouds are gathering over large cities!"

In the context of the differentiation you describe between cities and the state, don't these issues plead in favour of an increased integration of large cities into their regional areas?

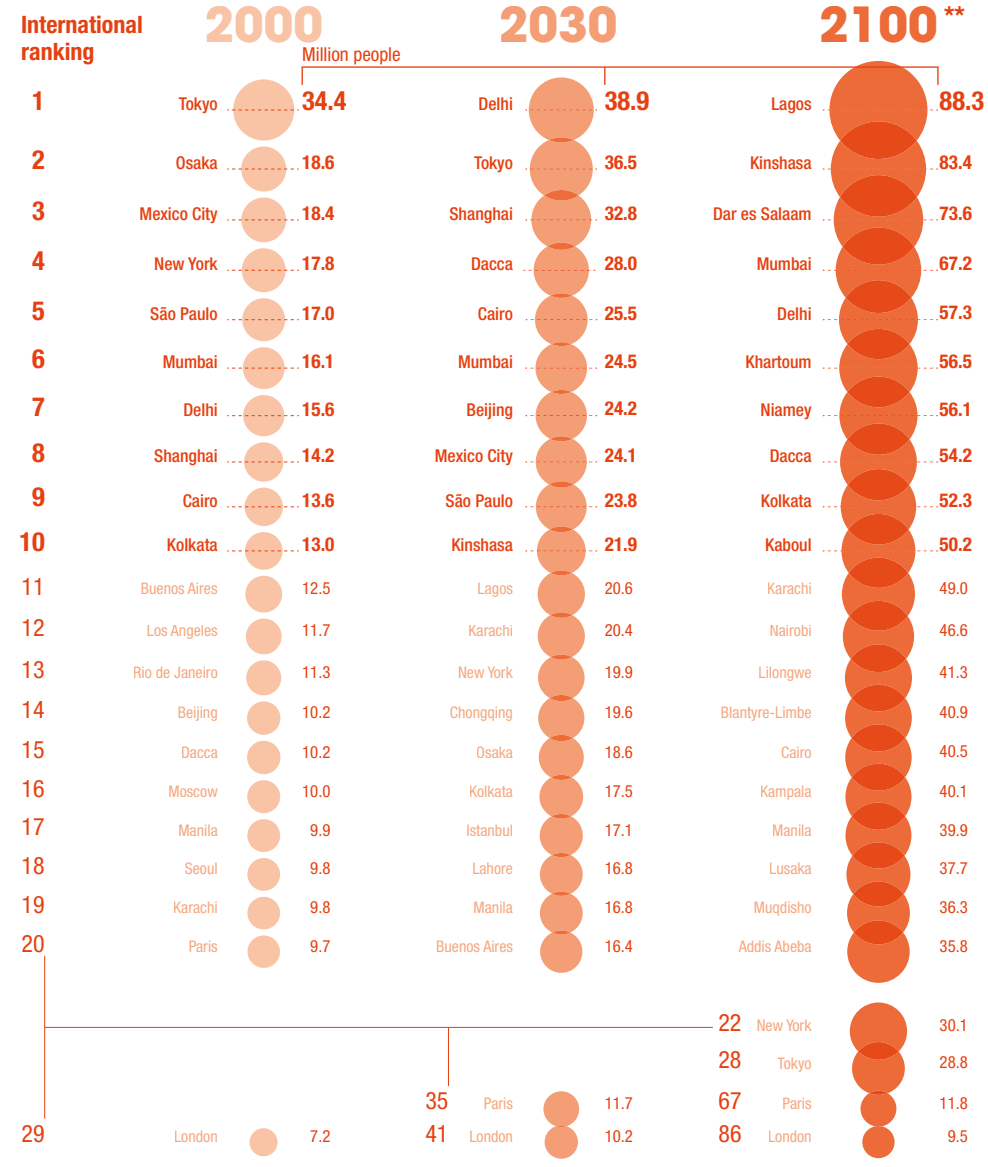
P.L.G. We are seeing regional cities assert themselves in certain cases. This could be one of the models gaining strength in response to the increasing conflict between cities and states. We can see this happening between Dubai and the United Arab Emirates, as well as in the US. It's still bubbling under the surface in Shanghai, and could emerge in Brazil in the new political context. As Barcelona and Catalonia show, the region provides the city with additional resources. This is an interesting question for Paris and the Paris Region.

But that's a model among many others. The decisive variable remains the capacity for collective action. This is the great strength of Scandinavian cities. Investment in transport or education, which attract fierce competition, and solving problems of pollution, which will no doubt end up causing the attractiveness of cities to wane, are not down to cities alone: they depend on cooperation, in particular with state governments. ■

Interview by Paul Lecroart, Léo Fauconnet and Maximilian Gawlik

1. *The Fading American Dream: Trends in Absolute Income Mobility in the United States* (Nadarajan Chetty, David Grusky, *et al.*), *in* Science 356 (6336), pp. 398-406, 2017.
2. James C. Scott, *Seeing Like a State: How Certain Schemes to Improve the Human Condition Have Failed,* New Haven, Yale University Press, 1998.
3. Saskia Sassen, *The Global City: New York, London, Tokyo,* Princeton University Press, 1991.

Top 20
the world's **largest cities***



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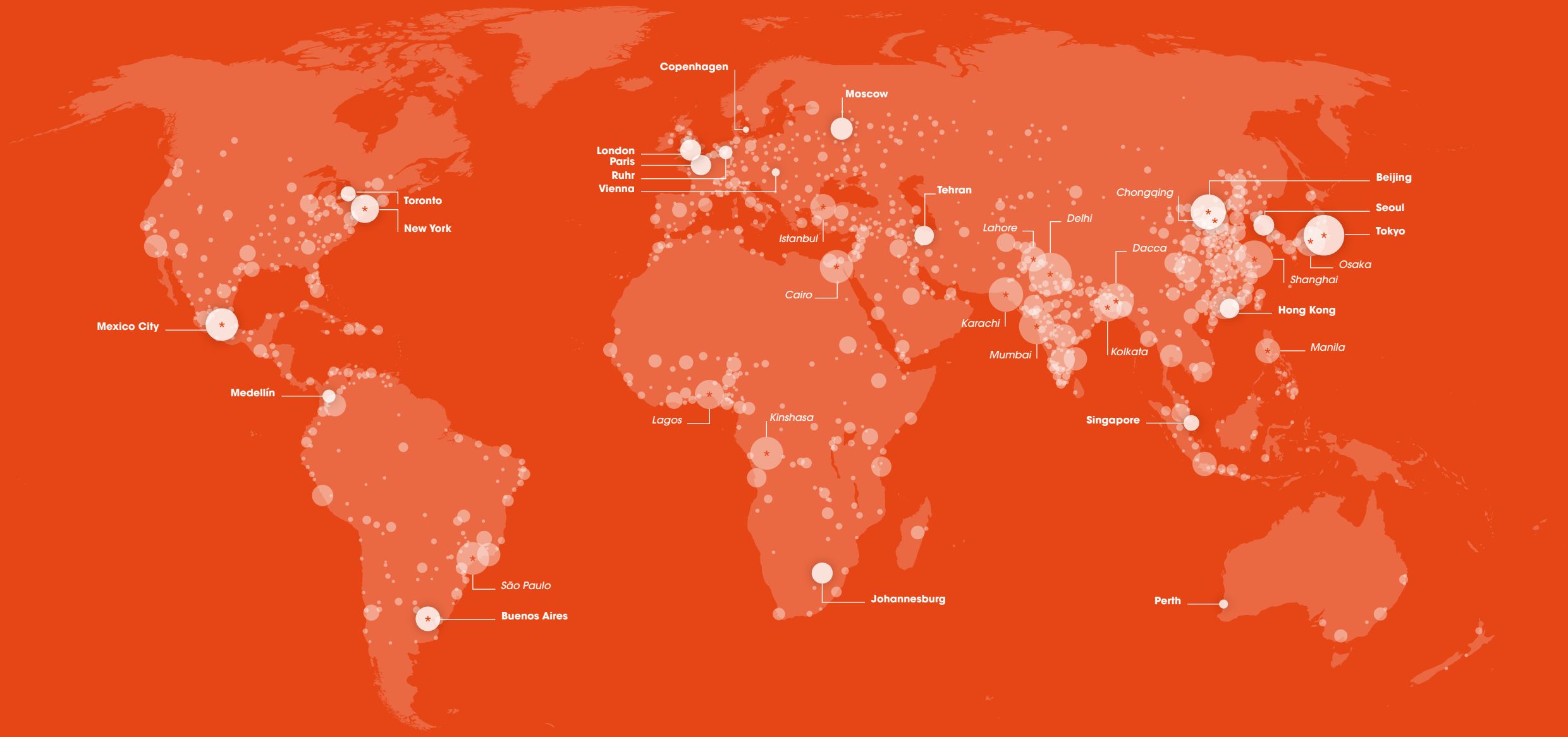
Sources: United Nations, World Urbanization Prospects, The 2018 Revision

* Population of urban agglomerations.

** Predictions by D. Hoornweg and K. Pope K, based on WUP extrapolations, see "Population predictions for the world's largest cities in the 21st century", 2017.

A WORLD OF CITIES IN 2030



Populations in 2030

40 million Delhi

20 million New York

10 million London

5 million Brasilia

1 million Rotterdam

City studied in this book

City in the top 20 ranking

Other city

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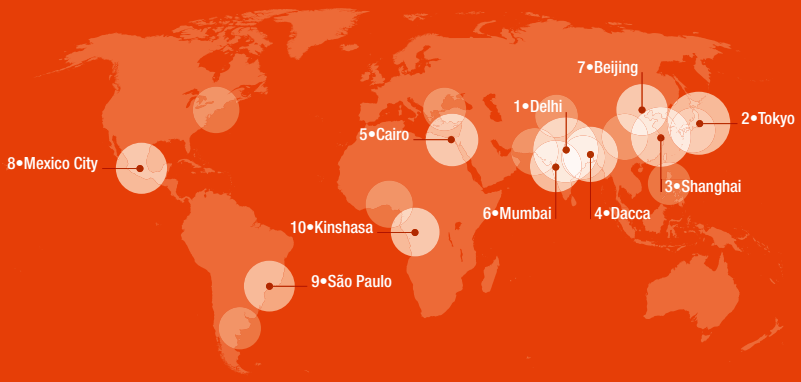
Data: United Nations WUP, 2014 • Graphic adaptation by L'Institut Paris Region of D.A. Smith, CASA UCL

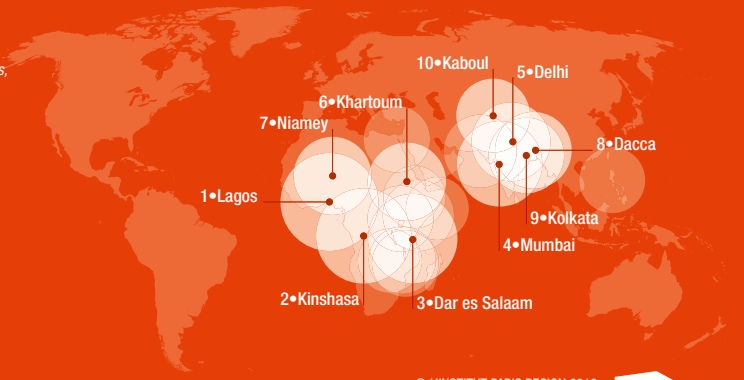
2000

2030



2100 **

** *Predictions by D. Hoornweg and K. Pope, based on WUP extrapolations, see "Population predictions for the world's largest cities in the 21st century", 2017.*



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Sources: United Nations, World Urbanization Prospects, The 2018 Revision

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CITIES
CHANGE THE WORLD

According to the UN, over two-thirds of the world's population will be living in urban areas by 2050. Today the planet counts an estimated 4.2 billion urbanites; this number is set to rise to 5 billion by 2030 and 6.7 billion by 2050.

Cities lie at the heart of financial and migratory flows, and shape global societal values and lifestyles. They generate both economic wealth and technological innovation, and are the drivers of social and environmental transformation. They are windows on a rapidly changing world.

Since the beginning of the third millennium, city centres have been regenerated and intensified, while suburban areas have continued to spread. But the long-term development of cities raises many key issues. As victims of their own success, will they end up becoming unliveable? How environmentally and socially sustainable will these urban areas be? How can attractiveness and quality of life for all be effectively interconnected?

From New York to Paris, from Tokyo to Copenhagen, and from Singapore to Medellín, cities are inventing new development trajectories on a range of different scales, combining economic competitiveness, urban regeneration, social inclusion, energy frugality and climate resilience. By doing this, they are changing the world.

This issue of *Les Cahiers* highlights particularly inspiring strategies and initiatives that respond to the fundamental challenges faced by the Wider Grand Paris.

This book as well as its French version can be downloaded from our website: www.institutparisregion.fr.

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