

TRENDBOOK N°06

# CITIES OF TOMORROW: RESILIENT AND INCLUSIVE



**BNP PARIBAS  
REAL ESTATE**

Real Estate  
for a changing  
world

# WHAT RESPONSIBILITY DOES THE REAL ESTATE SECTOR HAVE FOR NEW URBAN LIFESTYLES?

EDITORIAL



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**F**rom now until 2050, there will be an increase of 2.5B people living in cities. A number of challenges – sanitary, social, environmental, economic and urban – go hand in hand with the attractiveness of urban metropolises, but cities know how to bring about innovations and experiments in order to reinvent themselves.

The health crisis has accelerated the need for a range of different interactions, on the scale of a neighbourhood, a block of homes or even a building. We are now entering into a period of “Re” meaning resilience, rehabilitation, reorganisation, reversibility, reuse, regeneration and reinvention. Just a few of the ideas that must now be converted into real actions in order to build real estate that is more sustainable and promotes quality moments of life.

In the way we design our cities, it is essential to **reinvent** ourselves, office buildings must become more open and be useful for the community during the day as well as in the evening and at weekends. Today we must optimise the way we operate and use buildings. Residential buildings could, for example, be used by hotels, co-living and co-working facilities or even home schooling.

It has also become essential to design buildings in such a way as to offer greater proximity and **reconnect** to nature. Urbanism must go beyond mere greening projects and fully embrace eco-systems. Cities are undergoing profound changes to better protect themselves

**“We are now entering into a period of “Re” meaning resilience, rehabilitation, reorganisation, reversibility, reuse, regeneration and reinvention. Just a few of the ideas that must now be converted into real actions in order to build real estate that is more sustainable and promotes quality moments of life.”**

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against bioclimatic influences, whilst at the same time reducing their environmental impact. This must be done in such a way as to promote the circular economy and the reuse and **recycling** of building materials.

City life is also about honouring the history, which is written into every stone, building and neighbourhood. In order to preserve and protect this heritage, it is important to **renovate** and **restructure** the existing, in line with the new environmental norms and interactions that are reshaping our future environments.

Real estate is at the heart of urban construction and it can offer appropriate solutions to support cities and their stakeholders on a path to **resilience**. For BNP Paribas Real Estate, buildings are more than just constructions - they are resource centres where people should feel comfortable and be able to live and work together. Today, they are drivers for inclusion and sharing.

There's just a small step between the quality of cities and the quality of life! To solve this equation, we must all work together; architects and urban designers, political and economic stakeholders and associations, with citizens at the forefront.

With the adoption of sustainable transport, greening, hybrid buildings, a new relationship to time and co-constructed projects, there are infinite possibilities for the cities of the future, and that's what makes our shared mission so exciting!

Let's explore!

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## CARLOS MORENO

Scientific Director of the Entrepreneurship, Territory and Innovation Chair of the Paris IAE - Panthéon Sorbonne University

# THE 15-MINUTE CITY: BUILDING A CITY ON OUR DOORSTEP

**Scientific Director of the Entrepreneurship, Territory and Innovation Chair of the Paris IAE - Panthéon Sorbonne University, acknowledged for his work on the smart and human city, Carlos Moreno is the creator of the 15-minute city concept. Here, the Franco-Columbian professor shares with us his vision of the future of cities, and how they will come to redefine our rhythms and sense of proximity, thus giving time back to those that live in them.**

### **Can you tell us about the origin and the ideas behind the 15-minute city?**

The 15-minute city concept was born in the sixties and was the result of research conducted by the international scientific community in Europe and the United States. We were trying to understand the links between time and cities via the coming together of three different trends: chronourbanism, the relationship to time that we have within cities; chronotopia, the different ways of using spaces according to the moment; and topophilia, the way we talk about where we live. To go beyond the 'temporal rhythm of the city', I tried to understand the different ways we interact with a city, so as to go further than the notion of infrastructures. We must no longer simply be urban planners but focus more on life within the city and must awaken feelings of pride, civility and civicism within citizens. The major challenge is to free city dwellers from only being able to travel a certain way

around a city, like having to commute for an hour or so morning and evening. What's more we want to break away from the notion of anonymity that is so present as a result of the speed which cities operate at. To succeed in doing this I have identified six daily urban necessities which should be reachable by foot or bike in 15 minutes. These are necessities linked to living, working and shopping, but also access to physical and mental health care, culture, education and leisure facilities. The 15-minute city should enable every one to explore and make the most of the resources of cities that have become so multifaceted.

### **Is the Covid-19 health crisis an accelerator for the 15-minute city?**

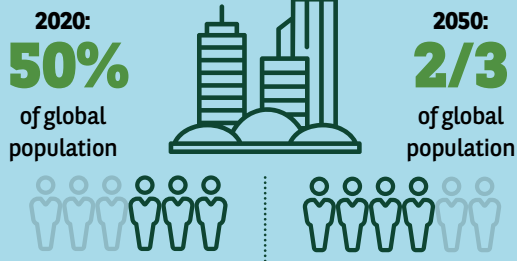
The health crisis has presented new ideas concerning our relationship to travel and a reduction in the use of public transport which subsequently offers a sustainable response to the climate change challenge. More than

ever, the Covid-19 pandemic highlights the relevance of the 15-minute city. A number of cities, in particular those in the C40, a global network of cities united to take climate action, have been led to question themselves as during lockdown the need to be close to certain services proved essential. The C40 (Cities Climate Leadership Group) chose the 15-minute city as a way to help come out of the sanitary crisis, while reinforcing sustainable means of transport. Milan, the economic capital of Italy, along with other cities, hit hard by the crisis, has chosen to transform 35 km of roads into cycle lanes. Cities are therefore working on creating new forms of social contact and a new relationship to time. The pandemic has showed us that we can live and work differently. More than ever before, the scattered, multi-centred and interconnected 15-minute city is the most resilient option. ■

[Read the full article here](#)

# CITIES IN FIGURES

## Growing attractiveness



Source: UN Info, 2018

production of  
**80%**  
of global resources

Source: World Bank 2016



## Environmental challenges



Cities occupy 2% of the earth's surface but produce over  
**60%** of greenhouse gas  
**78%** of global energy

Source: UN Habitat, Action Climat

The carbon footprint of a building is caused by:

Materials (in the construction phase)  
**60%**



Energy consumption (operational phase)  
**40%**

Source: "Construire bas carbone – Manuel à l'usage des décideurs, BBCA, Juillet 2020"

## Moving on up



**40 to 110%**  
energy savings  
thanks to green roof tops

Source: France Nature Environnement, 2018



**+ 2 000 km**  
of cycle paths in the EU  
since May 2020

Source: European Cyclists' Federation



**2025:**  
5G coverage in urban zones and main  
transportation routes in the EU

Source: Europe's 5G Action Plan, European Commission, 2020



# HOW COLLABORATION MAKES FOR RESILIENT CITIES

According to the UN (United Nations), more than 54% of the world's population lives in cities today. This figure will reach 68% by 2050 meaning that two out of three human beings will be living in urban areas\*.

This rampant urbanisation requires a methodical, expert approach as it also gives rise to new risks such as climate change, epidemics and sanitary and geopolitical crises. How then can cities take these factors into consideration and become more resilient?

Interview with **Olivier Bokobza**, Deputy Chief Executive Officer of BNP Paribas Real Estate in charge of Property Development and **Séverine Chapus**, Deputy Chief Executive Officer of Property Development (Commercial and Residential) in charge of Development at BNP Paribas Real Estate.



\* Source: ONU, 2019

## What are the characteristics of a resilient city?

**SÉVERINE CHAPUS** / Resilience is under the spotlight with Covid-19, but we can recall that this notion was already an important factor in the analysis of the consequences of the 2004 tsunami in Asia. A number of studies have shown that strong social cohesion at all levels (neighbourhoods, districts, regions) was crucial for cities in returning to a 'normal' state after a shock of this sort. The tighter the social connections, the faster they were able to go back to the original state and way of functioning.

**OLIVIER BOKOBZA** / For me, governance has a pivotal role in the success of a resilient future city. It cannot come to fruition without clear and well-structured guidelines. The political projects driven by the authorities in charge of designing the city are therefore essential.

In addition, diversity is a necessity for the future of urbanism. It represents a source of economy and life, it is the key to creating a type of consumption that is genuinely local and has an influence on our real estate value chain. When we promote office buildings, we can also develop residential properties, when we promote residential property we can also develop intermediary social housing and encourage social diversity in a neighbourhood or city and contribute towards the creation of a shared and supportive environment.

### What impact did the Covid-19 pandemic have and will have in the future on the infrastructures of European cities?

**SÉVERINE CHAPUS** / This pandemic has opened up a new relationship to time and space. Luc Gwiazdzinski, geographer and Benjamin Pradel, sociologist, have explained this very clearly: over the past few decades, space and infrastructures have been designed to help us gain time. Today though, with the sanitary crisis, one of the questions we have to answer is how to manage time, i.e. life rhythms and urban planning, precisely to gain more space. After the lockdown, tactical urbanism really demonstrated its potential. Some cities, including Paris, used road and parking spaces to recreate user-friendly spaces, in full compliance with the principles of physical distancing, and to develop alternative means of transportation, by creating temporary cycle lanes. Eventually, we'll have to completely re-consider our public and private infrastructures. The risk could be to answer citizens' aspirations for more

green, breathing spaces by producing more urban sprawl that would encroach on fertile, productive and natural zones. The idea is to think in terms of chronotopia and make sure that urban facilities aren't used 30 or 40% of the time but much more. The more we make intense use of square metres, the more we become economical and environmentally virtuous. Rather than letting cities spread out, we should capitalise on what already exists and develop new, progressive ways of using that.

By making us reconsider our ways of working, this pandemic will leave a deep mark in how we construct buildings. With the benefit of hindsight, the growth of remote working will encourage 'productive journeys'. According to this concept, each journey should create value, for example, travelling for important professional meetings or necessary in-person meetups. In other words, each trip should be the answer to corporate or personal expectations. In offices, the challenge will be to use space to maximum capacity, and this will develop the creation and use of multifunctional spaces, which we are already working on and reinforce the 'augmented square metre' principle.

**OLIVIER BOKOBZA** / This crisis also leads us to reflect on our relationship with the home. We were already aware of the virtues of mixed spaces, combining living, working, meeting, socialising and shopping facilities, these are all a part of day-to-day life in cities. The lockdown has made us even more aware of the importance of the close vicinity of buildings: the quality of building entrances, local shops, facilities, green spaces. A combination of different



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ways of using these buildings (living, working, shopping) encourages sharing and creates new forms of social connection among inhabitants, shop keepers, employees, and independent workers.

### What could the city of the future look like?

**OLIVIER BOKOBZA** / There isn't one but several cities of the future. For me, Covid-19 is an accelerator in the transformation of cities, or rather, something that completely changes the whole game. Cities are going to change with the emergence of new ways of working, consuming and getting around.

In 2010 and the years following, we spent 80% of our time alone in our offices and 20% in meetings. Today these cursors have changed. The responsibility of companies today is to reconsider spaces in office buildings according to what users have to do. We can observe that individual offices are not absolutely necessary, whereas places for people to meet up and converse, interact, work and innovate are becoming more and more important. These new factors have an impact on the organisa-

tion of space, the reversibility of buildings, choice of materials and the provision of facilities such as bike garages, for example. I believe we should approach all this in a virtually scientific way, to confirm our intuitions, because we have embarked on a period of unknown duration. BNP Paribas Real Estate is present in major European cities through its office building activity. This gives us an overall view of successes and areas for improvement. In the same way as medical doctors, we put forward hypotheses based on our European network of 5,400 people and test them locally. As stakeholders of the cities of the future, we will analyse this feedback to see what lessons we can learn from it.

The functions of certain urban zones are going to change. Single function districts have shown their limitations, whether it be tertiary zones deserted during the lockdown or residential zones, that were on the contrary, over-occupied.

Certain obsolete office buildings in city centres won't be able to adjust to the new constraints of the future and will be transformed into housing programmes. Urban

design is above all based on the needs of the present day and transforms them in view of the needs of the future. One of the first observations of this crisis, taking into consideration all the necessary precautions, is that diversity at all levels is a good thing, because it creates social connection and cohesion.

**SÉVERINE CHAPUS** / I myself am attached to the notion of 'resource territories'. This approach takes into account all the precious resources of a given territory and is based on the idea of enhancing and working with what already exists, the urban and natural resources: space, energy, water and biodiversity. These resources also include know-how, talent and solidarity, which a city helps to connect, transmit and multiply. How can urban design take all these resources into consideration and respect them? How can they be used economically and frugally? How can we help regenerate and renew them so that they flourish? In our business activities, we really do have a responsibility to respond to these challenges. ■





**1**

# CITIES THAT HAVE ADAPTED TO NEW NEEDS

Urban greening has become a necessity. It's become mandatory to provide the possibility to access vegetation, whether in the form of a green rooftop, a balcony or a shared garden, as living and breathing spaces. This service offer will also have to be entirely digital. Between remote working and blended families, people are more and more aware of the importance of being connected.

**T**he shared use of urban space has started to emerge, encouraged by digitalisation and a collaborative economy. Cities are changing and are offering different spaces suited to the various activities of their inhabitants: living, working, exchanging, consuming, relaxing

and moving around, while at the same time protecting them against increasing risks. As the Covid-19 pandemic and the ecological crisis have shown us, they are vulnerable. The various ways of using urban space is not compartmentalised, and so combined, innovative models have emerged. How do these new ways of life affect the face of cities?

# SPACES REINVENTED BY OUR NEW LIFESTYLES

**Cities are having to adjust to the health crisis which has revealed more than ever before how important it is to reflect on the diversity of interactions and spaces.**

## **INTERACTION RATHER THAN OWNERSHIP**

The economic model based on the way we use and share services and space is having a profound effect on real estate across all types of property assets. Furthermore, co-living and co-working are providing a response to a number of lifestyles changes, such as the need for greater mobility and more erratic career paths that require increased flexibility and the sharing of costs.

## **A DIFFERENT CONCEPTION OF DENSITY**

City dwellers are learning to live with social distancing, that is in turn leading to a different organisation of public spaces. Additional square metres have been allotted to shops, restaurants and alternative services and modes of transport. Pavements and streets have, for example, gone beyond their original function as zones people just pass through, to become living spaces. In Paris, tables have been set up in parking spaces<sup>1</sup> and temporary bar and restaurant terraces remained until October 2020. Urban designers now have the challenge of maintaining social distancing without necessarily allowing cities to spread out. More than ever, today we must preserve appropriate densification, which is crucial for limiting various environmental impacts.

## **AGILITY AT EVERY LEVEL**

The Covid-19 pandemic is a source of ingenuity and new ways of sharing, and is encouraging the reversibility of space and different infrastructures. In Berlin for example, nightclubs have transformed into art exhibitions<sup>2</sup> or bars and restaurants<sup>3</sup>. Transportation infrastructures and office buildings, designed to absorb massive incoming and outgoing flows of people, are also adjusting to new rhythms and ways of working.

## **A RESILIENT URBAN NETWORK**

This juxtaposition of different ways of connecting with cities opens up new possibilities. At the height of the pandemic, hotels, residences and the famous Bateaux Mouches on the Seine,



were converted into accommodation for hospital workers or homeless people; factories adjusted their production lines and fablabs used their 3D printers to produce ventilators<sup>4</sup>. And tomorrow? The new 'resource territory' concept could represent the future of our cities. New urban, low-carbon, productive and fertile eco-systems are emerging, in spaces driven by principles of frugality and the concept of the chronotope (how we interact with time and space). All these current and future experiences are reshaping the face of our cities. ■

<sup>1</sup> [https://www.bfmtv.com/auto/la-mairie-de-paris-transforme-des-places-de-parking-en-petite-terrasse-pour-les-pietons\\_AN-201908130039.html](https://www.bfmtv.com/auto/la-mairie-de-paris-transforme-des-places-de-parking-en-petite-terrasse-pour-les-pietons_AN-201908130039.html)

<sup>2</sup> [https://numero.com/fr/musique/berghain-club-exposition-berlin-techno-design-sonore-covid-marcel-dettmann-sam-ainger-hannes-strobl#\\_](https://numero.com/fr/musique/berghain-club-exposition-berlin-techno-design-sonore-covid-marcel-dettmann-sam-ainger-hannes-strobl#_)

<sup>3</sup> <https://www.traxmag.com/berlin-clubs-reouverture-biergarten/>

<sup>4</sup> <https://www.pavillon-arsenal.com/fr/et-demain-on-fait-quoi/11534-a-la-recherche-du-principe-actif-de-la-ville.html>

# SHAPING URBAN DESIGN FOR SOCIAL INCLUSION

**Victoria Lee is an Urban Development Strategist advising cities in the UK and internationally on major infrastructure, housing and mixed use developments. By advising and arbitrating between the private and public sectors, she helps ensure the best design for the public good.**



**Victoria Lee**  
Urban Development Strategist

## Can urban projects answer the needs of everyone?

Yes, but it requires balance. First, you need to balance the needs of everyone through design. If a city is overdesigned, public space can become too exclusive. If it's underdesigned, it lacks structure. Then you need the right level of governance. The best cities are governed to regulate space while allowing citizens enough informality to feel comfortable to use space. Some cities today are overdesigned and over governed, which is leading to the exclusion of certain socioeconomic groups. A city with the right balance of design, governance and development will naturally attract mixed-use buildings and a healthy mix of people and spaces.

## What can the city of Oxford teach us about inclusion?

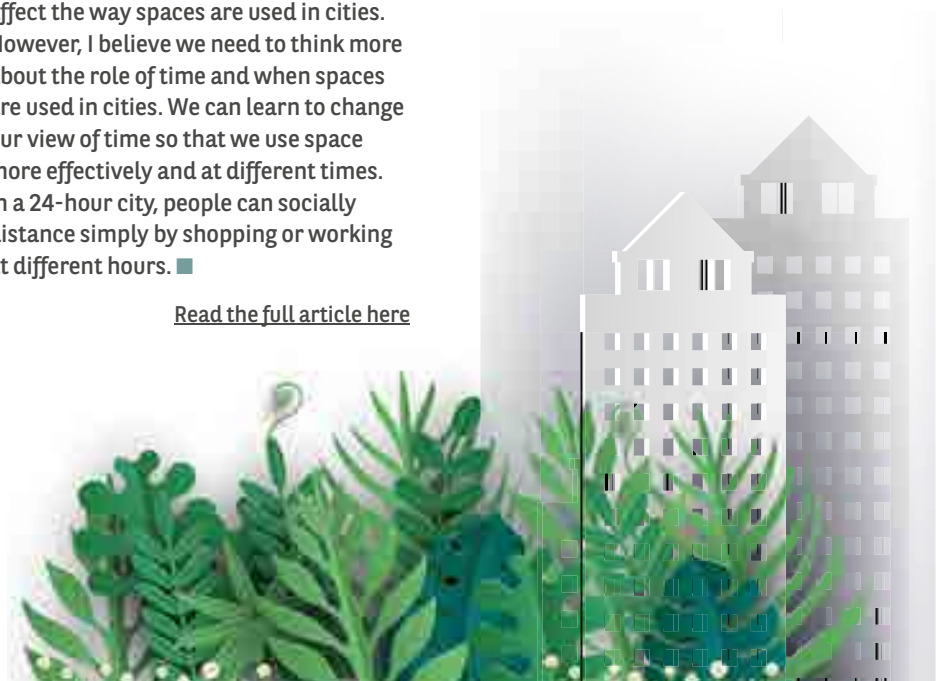
In Oxford, the city's inner ring is a designated conservation area and is largely owned by the Oxford colleges, while ownership within the outer ring is more varied. It's the inner ring that attracts the majority of investment, political influence and prominent architects. The difference in approach between the inner and outer rings filters down to the inhabitants. Oxford is a great city on many levels, but it also clearly shows how land ownership and management is central to social inclusion and diversity.

**“We need to think more about the role of time and when spaces are used in cities .”**

## How will Covid-19 change cities?

We all need to think more innovatively post-Covid. Most discussions seem to focus on how social distancing will affect the way spaces are used in cities. However, I believe we need to think more about the role of time and when spaces are used in cities. We can learn to change our view of time so that we use space more effectively and at different times. In a 24-hour city, people can socially distance simply by shopping or working at different hours. ■

[Read the full article here](#)



# TECHNOLOGY AT THE SERVICE OF INTELLIGENCE

**IoT not only interconnects infrastructures, it digitalises each square metre and yields new services. What potential does it represent for urban development? The reorganisation of public space, a reassessment of traffic and of course, an improvement to our day-to-day lives!**



**€1.1B:**

the smart city global market in 2025<sup>1</sup>

## TWO MAIN CATEGORIES OF IOT

During the early stages, IoT relied on sensors capable of measuring air pollution, public transport affluence and the wear and tear of equipment in real time. The next generation of IoT takes things further with remote piloting: a smart street lamp for example can track passing cars and pedestrians in order to instantly adjust lighting.

## AGILE SMART CITIES

Smart cities pave the way for the customised and more economical management of collected data. This data aims to improve performance, while simultaneously serving the end-user.

In 2010, Santander in Spain was chosen by the European Commission to be a pilot smart city. Ten years later, the municipality has improved the lives of its 180,000 citizens thanks to the 20,000 sensors put in place, reducing traffic jams by 80% and saving 40% in lighting costs<sup>2</sup>. Water management has also been affected: gardens and public parks are equipped with humidity sensors that, when needed, trigger a watering system. These new generation sensors open up a whole new range of possibilities, such as the connected waste containers in Copenhagen that optimise the collection route and the localisation of bins<sup>3</sup>; or “smart parking” in Geneva,

which informs drivers where free parking spaces are and adjust prices according to demand<sup>4</sup>.

## DATA COLLECTION TO PROMOTE INNOVATION

These connected solutions depend on the participation of inhabitants, whether it be voluntary or involuntary. The increasing amount of data collected must take into consideration the security and anonymity of the information. The challenge is to promote innovative services in cities, while at the same time guaranteeing citizens’ privacy and thereby placing data at the heart of public interest. ■



<sup>1</sup> cabinet Roland Berger, Think act, Smart cities à la française, 6 juillet 2017, <https://www.rolandberger.com/fr/Publications/Smart-Cities-à-la-française.html>

<sup>2</sup> <https://reseau durable.com/santander-smart-city/>

<sup>3</sup> Copenhague a été ville européenne verte en 2014 (source UE <https://ec.europa.eu/environment/europeangreencapital/>)

<sup>4</sup> <https://www.letemps.ch/economie/parking-intelligent-debarque-geneve>

# 5G AND BEYOND: MAKING OUR CITIES SMARTER



**Ferry Grijpink**  
Senior Partner, McKinsey & Company

**Ferry Grijpink, Senior Partner, McKinsey & Company, recently helped establish the McKinsey Center for Advanced Connectivity. He explains how 5G and other technologies can transform our cities.**

## **Why is 5G a revolution for our cities?**

The revolution is not just 5G. It's a combination of technologies, including Wi-Fi 6, which boosts security and lowers latency; and LEO satellites, which expand IoT connectivity to remote locations. 5G itself comes in two flavours: mid- to low-band, which is faster but has lower latency; and high-band or millimetre 5G, which brings massive new capacity.

## **How will these technologies benefit cities?**

Because the network is so reliable, cities will be able to connect even mission-critical services. They'll be able to make any urban service smart at very little cost, because devices don't need inbuilt processing power: the data can simply be sent to a secure cloud, processed and sent back before you know it.

## **Can you give some concrete examples?**

5G allows cars to talk to parking meters and to each other. We'll be able to stream 8K-quality images directly to a hospital from an ambulance, so doctors know exactly what they need to do when the patient arrives. It will be easier to

monitor patients remotely – meaning they don't have to stay in hospital as long. Retailers could also use augmented reality to show customers what they look like in a new pair of trousers. They won't even need fitting rooms.

## **How can cities make this happen?**

Much of this can already be done, but data complexity and security issues are blocking the way. Cities need to shape a framework for data privacy and they need to build horizontal platforms for multiple use cases. For example, a healthcare platform allowing doctors to follow patients could easily be adapted for insurance companies to follow a claim.

## **How can cities protect themselves against network problems?**

It will be essential to build robustness into critical functions. Public services like policing and traffic must be the network's priority so they always have the required bandwidth – no matter how many people are watching streaming platforms. Cities will need to figure out how to eliminate single-point failures and create fallbacks when a functionality is not working properly. ■



# THE PANDEMIC AS AN OPPORTUNITY FOR URBAN CHANGE

**Angela Baldellou directs Observatory 2030, an initiative of the Higher Council of Spanish Architectural Colleges to create more inclusive and sustainable urban spaces in Europe. Based in Madrid, she is an expert in environmental architecture, business development and institutional relations. She explains how Covid-19 has impacted Madrid and others metropolises– and how it could be a catalyst for change in cities.**



**Angela Baldellou**  
Director of Observatorio 2030

## **How has Madrid adapted to the challenges of Covid-19?**

Since the first lockdown, the focus has been on promoting a safe return to work and reducing rush hour traffic on public transport. Bus and cycle lanes have been extended, public transport is more frequent despite a decrease in demand, and capacity limits have been introduced in the metro. The local authorities have also reached agreements with companies to increase flextime and remote working. I think the role of the private sector is extremely important.

## **How has the pandemic affected our relationship with our environment?**

Covid-19 has revealed our vulnerability as a species and promoted a necessary debate on our way of life and how we inhabit the planet and cities. Addressing the climate crisis was already a matter of survival, but there wasn't enough urgency because citizens couldn't see how it directly impacted their lives. The pandemic has created that urgency, and it's time to understand that cities are complex organisms that interact with their environment in a symbiotic way. The problem is that globalisation has standardised models and has disrupted

this symbiosis. That's why we need to unearth a sense of being local in each city. We need to reclaim the identity and way of using individual places, recover the fabric of rootedness that is essential for social inclusion, and put people at the heart of urban policies.

## **Will sustainability become more central to life in Madrid?**

Madrid is already one of 15 European cities working with EIT-Climate-KIC to become carbon neutral and climate resilient by 2030. Through the energy transition, we aim to bring economic benefits to the city through energy savings, and operational and health improvements. After experiencing a few months of cleaner air, citizens are now more aware of pollution. We hope our investment in green infrastructure and initiatives will benefit from this momentum. The key is to try and maintain the climate-friendly habits people have adopted, especially remote working and greener forms of mobility.

## **Could the pandemic have a lasting effect on how people perceive cities?**

During the pandemic, cities have often been seen as aggressive, and people have

been looking for friendlier environments in the countryside. Until now, we have tended to promote big cities over smaller cities, especially among young people, and I don't think that's the best approach. Now that people have discovered remote working and studying, they are open to change. We have an opportunity to reinvent the current model by connecting small and big cities in a more productive way. Cities can work together in a collaborative network, like they do in Holland. We need to find complementary products and industries that different territories can share – and technology

is the perfect tool to facilitate this new balance between big and small cities.

### **How will recent events shape Madrid in the long term?**

I think that, more than ever, change will be driven by citizens. During the pandemic, Madrid's platform for citizen participation, Decide Madrid, has seen greater demand for environmental projects because people have a new awareness of the need to take care of their environment. It is up to citizens to demand that health and sustainability are integrated into the design of cities.

They must ensure that local authorities promote public-private collaboration to improve their quality of life and create more resilient environments. That's why we all have to work to ensure we don't forget this period. The danger is that, when we have vaccines and the pandemic is behind us, we will revert to the same unsustainable habits conditioned by our economic model. This is an opportunity to rethink and plan a different evolution of our urbanism and our environment – and we must act on it before it's too late. ■

[Read the full article here](#)



# URBAN LOGISTICS: CROSSING THE LAST MILE

As a result of the pandemic and consumers not being able to go out and shop, shopping online and click-and-collect services, for anything from groceries to clothes, have become an accelerated practise. Consumers demand competitive prices and short delivery times, which mean that the last mile of delivery is the most expensive and complicated. Urban logistics, which involve inner city warehouses, hubs and transportation, is of growing interest to many companies and investors. What exactly does this look like across Europe?

Here we speak to **Oliver Wissel**, Director European Logistics & Industrial Advisory, **Igor Roguski**, Head of Industrial & Logistics for Central and Eastern Europe and **René Jeannenot**, Associate Director, Logistics France all from BNP Paribas Real Estate.

## Can you give us an overview of urban logistics and the main difficulties and shortcomings currently facing the sector?

**OLIVIER WISSEL** / Covid-19 has meant logistics is more important and increasingly present in the city. We're now all shopping online with goods coming from big boxes outside of city centres and travelling through the city to reach customers. More goods mean more traffic and the need for parking so products can be unloaded. In Germany, there is a particular trend for the delivering of beverages, in under 90 minutes. To be able to do this there must be inner city warehouses with enough parking available. The market, from a real estate point of view, was not prepared for the boom and increase in activity that Covid-19 had on e-commerce. Most companies

have basic e-commerce strategies, so we are working with them to help define a clear strategy with a good distribution network. E-commerce activity is the whole supply chain from general storage to how to deliver as quickly as possible to the consumer. Companies rely on delivery companies to distribute their goods, with the last mile being the most expensive stage of the logistics chain.

**IGOR ROGUSKI** / In Poland, the number of vehicles in our cities will grow, because of the growth of new delivery services for food and e-commerce. In the cities, vehicles will be more environmentally friendly, with more bikes and electric vehicles. In a few years, once legislation has changed, I imagine there will be an increase in autonomous vehicles.

**RENÉ JEANNENOT** / In Paris, urban logistics is as much about location as it





is about supply and demand. How can the centre of Paris be supplied with clean vehicles on a regular basis? Should delivery times be extended? Many investors have decided to support their customers in all aspects of the supply chain. There is now a very strong demand for key urban logistics locations, whether for new developments or conversions. The main difficulty is finding buildings or land and convincing the local authority of the relevance of setting up an urban logistics hub.

### Can Covid-19 act as an accelerator for the integration of logistics into the city?

**OLIVIER WISSEL** / Covid-19 has pushed the urban logistics class forward about five years. Pre-Covid, we had a booming office and hotel market, which meant that retail and urban logistics rents couldn't compete. The urban logistics class' infrastructure isn't quite ready, despite investors wanting to buy into it. It may be behind other asset classes but is rapidly developing.

**IGOR ROGUSKI** / Because of Covid, many supermarkets are open 24 hours so people can shop at any hour of the day. Polish consumers are now choosing to shop in retail parks for convenience and the era of huge supermarkets is basically over.

There are more and more examples of mixed retail and logistics schemes and we think they will be even more popular in the coming years.

**RENÉ JEANNENOT** / We can naturally expect a new record for e-commerce in 2020 under the impetus of the health crisis. This will certainly accelerate the need for urban logistics, from the warehouse to home delivery and pick-up points. A certain number of promoters who are thinking on the scale of districts or tertiary buildings are reflecting, sometimes guided by the municipality, on the integration of urban logistics within their programmes. We are also called upon to think about buildings on two levels in order to respond to the lack of land.

### How can logistics be put back into the heart of urban policy in the future?

**OLIVIER WISSEL** / By new developments such as pick-up points. In Spain for example, the e-commerce company Alibaba has set up pop-up shops in shopping centres where you can see and touch the products, providing the ease of online shopping with a physical experience. In Paris the "Réinventer la Seine" (Reinvent the Seine) programme looks



**Oliver Wissel**   
Director European  
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Associate Director,  
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to improve inland waterways transport, which would reinvent the idea of mobile warehouses which combine barges and land modes of transport such as electric vehicles and scooters. Also in France, the Renault group has paired with La Poste to conceive the delivery service of the future, notably by the creation of an autonomous vehicle.

**IGOR ROGUSKI** / There are more and more examples of mixing retail and logistics. In Poland, one of the biggest e-commerce shops, which sells shoes and apparel, has entered shopping centres. However, instead of having shoes on display, customers measure their feet with tablets and choose the shoes virtually, picking them up from the counter when they are ready. I think there will be many more of these kinds of shop formats.

**RENÉ JEANNENOT** / Above all, it is a question of explaining to local authorities the importance that urban logistics play

when they are perfectly integrated into a city. Investors and operators must also commit themselves to buildings that are environmentally sustainable. For their part, transporters must also get involved with clean vehicle fleets so as to work against pollution and noise. This is the only solution for the development of this effective and coordinated new trade which is deliveries.

### **What changes do you expect to see in terms of urban logistics in the future?**

**OLIVIER WISSEL** / Electrification will be more important in the future, for example, online suppliers of beverages are asking how much electricity is available as they plan to change their transporters from fuel burning to electricity.

Urban logistics and light logistics are concepts linked to online activity but there are currently no developments

specifically dedicated to urban logistics. Across Europe, many investors are asking us for such last-mile products which simply don't exist. With a growing need for same-day or even one-hour deliveries, the call for urban logistics infrastructures in the city is becoming more present. These will likely be made available through mixed-use buildings, combining offices and housing with logistics.

**IGOR ROGUSKI** / We have observed a rising interest by investors to get into city centres to be closer to the market, as they see an opportunity to grow their margins and profits on such investments. This means that the rent for these types of facilities is much higher than in the outskirts of the cities. However, inner city facilities are not used for last mile delivery because in Polish cities most last-mile delivery services are located in the suburbs, so prices can remain low thanks to lower rents. ■

[Read the full article here](#)

As part of the larger Kultur Kampus project, offices will sit next to shops, a hotel, a crèche, universities, museums and numerous green spaces.



BNP Paribas Real Estate project, Senckenberg Tower in Frankfurt.

# MOBILITY: HOW TRANSPORT IS CHANGING THE FACE OF OUR CITIES



Throughout Europe, the expansion of soft mobility and electric transport has led us to question the way we use various types of infrastructure and how we share public space. These changes in the way we go from one place to another are supported by local authorities, who have championed innovation and public awareness of these initiatives. Transport networks are growing with an increase in users, revised routes and the increased pedestrianising of cities. Sustainable mobility, is as such, more than ever the focal point of debates and discussions relating to moving around towns and cities.

## A BOOM FOR BIKES

In 2019, 8% of Europeans carried out their daily journeys by bike<sup>1</sup>. The figure does however depend on the country with Holland leading the way with 36%, followed by Denmark (23%) and Hungary (22%). As a result of the Covid-19 health pandemic, European cities have seen a boom in the use of bikes, with the creation of temporary cycle lanes. According to the European Cyclists' Federation, in August 2020, 3,000 km of cycle lanes were announced and 2,000 km actually built<sup>2</sup>. If they are successful, they could become a permanent feature of various cities and give rise to new urban infrastructures (parking spaces, long distance cycle routes, repair centres, etc.).

## ALTERNATIVES TO COMBUSTION ENGINES

In 2019 there were seven million electric cars in the world<sup>3</sup>. The growth of this form of mobility, be it collective or individual, has a strong impact on the necessary power supplies for urban

and suburban transport hubs. Electro-mobility also applies to the autonomous shuttle buses being tested in Gloucestershire in the south of the United Kingdom<sup>4</sup> and in Nantes in France<sup>5</sup>. Hydrogen engines present the huge advantage of offering a car 200 km of autonomy after only three minutes charging time, compared to several hours for the electrical equivalent<sup>6</sup>. The Scottish town of Aberdeen is a pioneer in the use of this form of energy, with over 60 hydrogen-fuelled vehicles, including 10 double decker buses, powered by two charging stations. If it proves its worth, this energy type could end up being the main source for all forms of transport, including maritime and air.

## HIGH SPEED COMMUTES

Lockdown opened up a new era for remote working. Its growth could have long-term consequences on residential and office real estate, as well as mobility. Today, it becomes possible to move away from big cities thanks to high speed trains. In the wake of this trend, daily commutes between big cities and suburbs will spread to the city centres of secondary European cities that will likely become more and more attractive. ■



<sup>1</sup> European Cyclists' Federation, <https://ecf.com/resources/cycling-facts-and-figures>

<sup>2</sup> <https://ecf.com/dashboard>

<sup>3</sup> <https://www.iea.org/reports/tracking-transport-2020>

<sup>4</sup> <https://www.usine-digitale.fr/article/au-royaume-uni-une-navette-autonome-va-circuler-sans-operateur-de-securite-a-bord.N921934>

<sup>5</sup> <https://www.nouvelobs.com/nos-regions-connectees/20191003.OBS4529-une-navette-autonome-electrique-a-nantes.html>

<sup>6</sup> <https://www.lci.fr/sciences/video-voiture-a-hydrogene-l-europe-lance-un-plan-pour-faire-decoller-ce-carburant-ou-en-est-cette-technologie-en-france-2158780.html>

<sup>7</sup> [https://www.fch.europa.eu/sites/default/files/180515\\_FCH2JU\\_BC%20Regions%20Cities\\_Stakeholder%20Communication%20Package\\_French\\_OUT%20%28ID%203520091%29.pdf](https://www.fch.europa.eu/sites/default/files/180515_FCH2JU_BC%20Regions%20Cities_Stakeholder%20Communication%20Package_French_OUT%20%28ID%203520091%29.pdf)

<sup>8</sup> <http://www.h2aberdeen.com/>



## 2

## MORE ENVIRONMENTALLY RESPECTFUL CITIES

The flexibility of different interactions will become the norm. Buildings will accommodate hotels, co-living facilities, places where people will be able to work, live and school children from home. Even in tertiary spaces, shared fragmented spaces such as car parks are being considered in order to be open to everyone in the evenings and weekends, and shops within indoor passageways open to residents.

**E**nvironmental issues are, at the demand of citizens' aspirations and regulatory changes, at the core of urban planning. Urban greening isn't the only ally in response to the climatic challenge, buildings

and territories are designed as ecosystems in their own right. Carbon neutrality, preservation of biodiversity and energy performance – these transitions are focused on the quality of inhabitants' lives and are more than ever on the agenda in post Covid-19 cities.

# ENERGY AND ECOLOGICAL PERFORMANCE IN PRACTICE IN EU CITIES

**Greenflex has footholds in France, Italy, Spain and Germany and supports public and private stakeholders in speeding up their ecological transition by offering consultancy in sustainable development, operational support and financing solutions. We interviewed Sébastien Delpont, Chief Development Officer of Sustainability Consulting Branch.**

## **How do you manage energy performance?**

The management of energy performance is part of a broader approach that includes decarbonisation and ecological transition. We don't manage energy performance for the sake of it, but we do it with a 'less and better' cost-effective approach. Human, ecological and economic factors are also part of the purely technical aspects. Improving performance is the result of a subtle combination of various ingredients, including sobriety, funding and reconsideration of the way spaces are used.

## **Can you give us an example?**

In France, we are working on implementing the European EnergySprong movement of mass "net-zero energy guarantee" refurbishment. This led to a first in the Pays de la Loire region: the launch of a bulk purchase process with 14 social housing associations, with the aim of industrialising a local zero-energy retrofit system.

## **What role does data play in this management?**

Digital tools give us the possibility to gauge, adjust and design in a better way, in more detail and at a lower cost.

However, it takes more than just data and software to reach high levels of performance: the best equipment needs to be installed, including insulation, the transformation must be financed and users must understand the whole process. Data is of course a very useful tool, but shouldn't be seen as a magic wand. Some under-equipped but well-designed and well-insulated buildings are more efficient than other high-tech buildings full of sensors.

## **Have you observed a difference in expectations and interactions in different European countries?**

There's a general consensus on better isolation and on consuming local sustainable energy, but uses, climates, behaviours and regulations differ. The Netherlands have opted for industrial refurbishment and are European champions in this field. We all have the same ambitions – we are all aiming for zero carbon, zero energy and zero waste, the paths we each choose to reach this however, will be different. ■

## **WOOD is winning cities' heart**

Managing Director at BNP Paribas Real Estate, Germany Udo Cordts-Sanzenbacher explains that, "Wood is a good alternative to conventional building materials". Indeed, in Germany alone, over 100 million m<sup>3</sup> of wood grows in forests every year, allowing for the creation of a number of wooden infrastructures across the country. The Z8 residential and office building in Leipzig for example is built in solid wood. With its striking structure, the property proves that even buildings of the highest fire protection class can be stunning examples of architecture.



# THE CIRCULAR ECONOMY AT THE VERY HEART OF CONSTRUCTION

**“Nothing is lost, everything is transformed”. The circular economy applied to real estate means re-using and developing buildings, infrastructures and neighbourhoods without drying up natural resources, polluting the environment or damaging our ecosystems. The aim of the circular economy is also to use raw materials sensibly, re-purpose and recycle waste. It is, more than ever, a part of property development’s business model.**



## A CHANGE TO THE STANDARD

The circular approach considers buildings in terms of raw materials, waste and resources. The sustainability of a building and what it can offer are at the core of the whole process. The challenge is to make the most out of these construction components, in terms of durability and space. The aim is also to recycle them in an economically responsible way in order to limit their impact on the environment. The approach covers all stages in the life cycle of materials: eco-design, environmental impact, on-site waste sorting and recycling in the deconstruction phase. Bio-sourced materials such as wood structures, wood or hemp wool insulation have a central place in such projects.

## A VIRTUOUS CIRCLE

Circularity relies on the commitment of all players in the construction process: contractors, project managers, manufacturers of construction materials, various worksite contributors and waste disposal specialists. Property management also contributes to this virtuous circle by re-using maintenance equipment such as heaters and furniture, for example. The salvaging of components can also be a source of income via recycling.

## A EUROPEAN ACTION PLAN

The plan, issued in March 2020 by the European Commission, includes guidelines for the construction sector that are due to be rolled out by 2021 in a “global strategy for a sustainably built environment”. Among other measures there is the revision of regulations concerning construction materials, that includes the possibility to lay down requirements for the proportion of recycled materials, digital prints for buildings or the use of the Level(s) assessment framework aimed at analysing materials’ life cycle in public markets.

Circular buildings have a bright future ahead, as long as certain issues are correctly addressed, such as the organisation of collection and recycling procedures and the level of commitment of project management. ■

## THE CHALLENGES OF EUROPEAN CONSTRUCTION

**50% of raw material extractions and over 35% of the overall waste production of 80% of buildings’ emissions could be avoided by a more efficient use of raw materials.**

Source: [https://eur-lex.europa.eu/resource.html?uri=cellar:9903b325-6388-11ea-b735-01aa75ed71a1.0013.02/DOC\\_1&format=PDF](https://eur-lex.europa.eu/resource.html?uri=cellar:9903b325-6388-11ea-b735-01aa75ed71a1.0013.02/DOC_1&format=PDF)

# NATURE AS INSPIRATION FOR TOMORROW'S CITIES

**Michael Pawlyn is known as a pioneer of regenerative design and biomimicry. He is the founder of Exploration Architecture, focusing on high performance buildings and the circular economy. He explains why he believes biomimicry holds the key to the most important challenges facing cities.**



**Michael Pawlyn**  
Founder of Exploration Architecture

## What is biomimicry?

Biomimicry looks to nature for new ways to meet human needs. It's about drawing on the vast sourcebook of solutions in the living world – which have all benefited from the long refinement process of evolution. As architects, we can learn how to create more efficient structures and use materials in more sensible ways.

## Can you give an example of a biomimetic building?

The domes of the Eden Project in the UK are a good example. We looked to nature for the structural efficiency of the spheres, which are made up of hexagons and pentagons. For the enclosure, we were inspired to use pressurised membranes, which weigh about 1% of double glazing – meaning we could use less steel, and more sunlight entered the building.

## How can we integrate nature into a city model?

When we're designing a city or a building, our first instinct should be to look at

the local ecosystem for inspiration. In an ecosystem, different species are interconnected and interdependent in terms of flows of resources. Everything runs entirely on solar energy, the system is zero-waste, and it's highly productive. This is the model we need for cities. We must look at each function in a city in terms of its resource needs and think how we can connect unused resources so they become the input for something else in that system – or even create a completely new industry that transforms waste into value. It's the key to achieving ecological harmony, a better quality of life, and so much more.

## How might Covid-19 impact the way we think about cities?

I am sure that Covid-19 marks the end of human exceptionalism: the idea we are insulated from the laws of science and climate change. We know most of these pandemics come from animals, and the more we disrupt ecosystems, the more

they will happen. I truly hope this teaches us to adopt a more respectful relationship with the rest of the living world, and to reconsider how we integrate ourselves into it.

## What is the future of biomimetic architecture?

Right now, biomimetic projects are often out of people's comfort zone, in terms of innovation – which is very frustrating, as we've done enough work to show the advantages are very real. Projects generally have a payback period of 5 or 6 years – although the Eden Project was less costly from the outset. The mindset today is that we need 3% growth for a healthy economy – but that equates to a doubling of the economy every 23-and-a-half years and we know we're already transgressing planetary limits. In biology, living systems exist in a state of dynamic equilibrium with high levels of growth, decay and renewal. And it's all about balance. ■

[Read the long version of this article](#)





# CITIES MORE RESILIENT TO CLIMATE CHALLENGE

**Even if they contribute to overall levels of greenhouse gas emissions, urban areas also suffer from the negative effects of climate change. Local and international initiatives have as such emerged to adjust our ways of life and our infrastructure.**

## A GROWING THREAT

For the years ahead, across most continents, climate specialists forecast not only increases in temperature and sea levels, but also an increase in the frequency and intensity of rainfall and droughts<sup>1</sup>. These phenomena seem unavoidable whatever the scenario for global greenhouse gas emissions, the only thing that remains to be seen is how quickly these changes will occur. Throughout the world, 70% of cities will be affected by climate change, in particular those in coastal areas<sup>2</sup>. Whilst increasingly vulnerable, these areas have established innovative methods in their fight against adverse weather conditions.

## WAYS TO ADJUST

How then can we prepare for these changing times in the best possible way? With a work group dedicated to climatic resilience in cities, researchers from the University of Wageningen in the Netherlands have put forward recommendations that can be applied to cities throughout the world. They are based for instance, on identifying zones that could be most affected, cooling neighbourhoods by an intelligent use of urban waterways and reducing damage caused by excess run-off water by planting trees<sup>3</sup>.

## SOCIAL INEQUALITIES

Underprivileged populations are often hit hardest by these extreme variations, in particular heat waves, as they generally live in poorly insulated buildings far from cooler urban zones. Energy performance and consumption, and overall comfort can only improve by investing in insulation and renewable energy. In Spain the city of Pamplona for example, has focused on residential buildings in the disadvantaged area of Txantrea and started working on improving the thermal insulation of facades and renewing urban heating networks. Between 2014 and 2017, the renovation of 600 flats generated an average of €560 annual savings in the energy bills of the households concerned, i.e. 70% in three years.

## STRONGER TOGETHER

Local experiences can be a source of inspiration; they can trigger international initiatives to encourage the sharing of experiences. The C40 was created in 2005 and now brings together



96 of the biggest cities in the world to reproduce, improve and speed up climate solutions<sup>4</sup>.

There is only a small gap between the global and the local! ■

<sup>1</sup> <http://www.meteofrance.fr/climat-passe-et-futur/le-climat-futur-a-l-echelle-du-globe>

<sup>2</sup> <https://www.c40.org/ending-climate-change-begins-in-the-city>

<sup>3</sup> <https://www.wur.nl/en/Research-Results/Research-Institutes/Environmental-Research/Programmes/Green-Climate-Solutions/Climate-resilient-cities-3.htm>

<sup>4</sup> <https://www.c40.org/>

# DOES CLIMATE CHANGE AFFECT REAL ESTATE INVESTMENT?

Climate change is altering our world, as year-on-year we experience more adverse weather conditions and natural disasters. The real estate sector is increasingly considering climate risk factors when buying or investing in a new building. Is there a more responsible way to use land and assets? And what exactly does this mean for how investors select their assets? Head of Sustainability and CSR at BNP Paribas REIM, **Nehla Krir** shares her views.



**Nehla Krir**  
Head of Sustainability  
and CSR



## Are assets in cities vulnerable to the effects of climate change more risky in terms of investment?

The real estate sector is beginning to better understand the risk that climate change might pose to investment on a long-term basis. This is something that will be done right from the acquisition stage and it is going to be essential in understanding how floods, extreme heat or earthquakes might impact a building. How the real estate sector works with climate change experts still needs to evolve though, in order to more precisely identify such risks.

## Does climate change or adverse weather mean some assets are seen as less attractive?

Not necessarily. As an asset management company, we strive to constantly mitigate risks and add value to assets. Our goal is to take assets that might be seen as less attractive and carry out work to improve and future proof them.

For an investor, a building's attractiveness is mainly based on their asset strategy, taking into account ESG (Environmental, Social and Governance) criteria. If for example the investor's strategy is based purely on location, they might favour less risky assets but if it is purely a value-added strategy, more risks can be taken.

## Is climate risk being integrated into investors' strategies?

Today institutional investors are asking us to respond to the risks posed by climate change when we respond to calls for tenders, meaning we must position ourselves on the subject. This was certainly not the case even five years ago. This is really driven by new European regulations and the many discussions taking place concerning this subject, particularly by the younger generations.

## Are there notable difference between countries?

The level of maturity for dealing with this risk can depend on if countries have experienced the effects of climate change. Droughts in Africa have meant that the continent has broken away from Europe or America in how well it manages and controls water.

On a European scale, the European Commission is pushing different members to be able to identify the climate change related risks to investment, management and reporting. This means that different industries are working to create new tools, which will tackle this problem head on. ■



The European Impact Property Fund (EIPF) aims to reduce GHG (greenhouse gas) emissions by 40% over its entire European portfolio over a 10-year period. To achieve this objective, EIPF will implement a “Best-in-progress” approach to improve the environmental performance of existing buildings in Europe, across all real estate sectors.

# BIODIVERSITY TAKES ROOTS IN CITIES



**Catherine Papillon**  
Global Head of Sustainable  
Development/CSR



**T**he rate of erosion of biodiversity – the living fabric of our planet that we are a part of – is unprecedented. In cities, humans coexist alongside other life forms. The responsibility of the real estate value chain is therefore to limit its impact, while at the same time cultivating biodiversity and the living world. The protection of biodiversity means limiting urban sprawl and the artificialisation of land, as well as using bio-based eco-designed materials. “The idea is to design real estate projects, right from the conception stage of a building, that take local biodiversity into account in order to limit the impact on the natural and human environment”, explains Catherine Papillon, Global Head of Sustainable Development/CSR for BNP Paribas Real Estate. Each project can also include receptacles for living beings in cities: green buildings, various habitats for different species such as beehives, bird perches, grassland and food production made possible by urban agriculture.

“Nature is an essential component for citizens’ wellness and fulfilment”, adds Catherine Papillon, who recalls its innumerable benefits: reduction of urban heat, improvement of air quality, promotion of social contact, stress reduction and so on. All over the world, an increasing number of major cities have put biodiversity at the heart of their urban planning and quality of life policies. With its 2020 Biodiversity Charter, BNP Paribas Real Estate has placed the topic, considered to be of great interest to investors and major occupiers, at the core of its CSR (Corporate social responsibility) strategy. Through seven different objectives, BNP Paribas Real Estate has made the commitment to champion biodiversity within each business line and further boost its influence across the real estate sector. ■



SEE THE  
CHARTER HERE:





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## MORE INCLUSIVE CITIES

Property developers are not dinosaurs and they know how to question themselves. We were the first to pool our research and development departments and hand over our production secrets to local authorities. Cities expect us to collaborate with local politicians, semi-public and public development companies but also to include the local population.

**D**esigned for their inhabitants, cities will now be built with them. Each citizen becomes a player in the making of the city and new factors of attractiveness have arisen, such as the capacity to

include fragile and vulnerable populations and the creation of participative modes of governance. The end goal is to enable each citizen to flourish by encouraging diversity. How can we encourage inclusion in cities in a post-Covid-19 era?

# HOW CAN WE CREATE DESIRABLE, INCLUSIVE AND SUSTAINABLE CITIES?

**Philippe Chiambaretta** is a French architect and town planner, founder of PCA-STREAM, a think tank and architecture firm. PCA-STREAM combines theory and practice in a multidisciplinary approach to design the cities of the future. Here, he explains his urban policy based on the health of cities through various experimental projects.



**Philippe Chiambaretta**  
Founder of PCA-STREAM

## Why have you described the city as a metabolism?

The demographic explosion combined with the improvement in living conditions in the second half of the twentieth century has had a drastic effect on the biophysical equilibrium of the planet. The exponential increase of the human population will lead 90% of the population towards various forms of urban habitat within the next 50 years. This confirms the fact that cities will play a key role in the transformations that await us, and are the places where these changes will happen. This urban concept should be approached with the benefit of hindsight in order to instil a sense of resilience that is unknown today.

By metabolism I mean that a city is a complex and dynamic system that functions very much like a living organism.

At PCA-STREAM we see urban projects through a prism that brings together the five levels that define cities: mobility, infrastructure, use, buildings and of course nature. After analysis, we can put forward a conceptual framework capable of taking into account the infinite complexity of such systems. We have been commissioned to study the future of the Champs Elysées avenue in Paris for example, the aim being to bring back residents to this avenue that now belongs

mainly to tourists. A group of fifty experts, scientists, artists and designers are collaborating with us to analyse traffic flow, real estate, planning of public and green spaces. Starting with the data, we run simulations for road traffic, different way of using spaces, temperature and so forth. The data produces an MRI scan of the city and enables us to measure the effectiveness of what we do and adjust it if necessary over time, in a test and learn approach. The challenge in urban design is to be able to go beyond a segmented, specialised, top/down and linear model and aim for a cross-cutting and interdisciplinary, bottom-up and circular model. In this way, the architect becomes the conductor of a collective form of intelligence, backed by artificial intelligence that is merely a tool at the service of a new form of urban conception.

## In what way is inclusive design a crucial factor for cities?

Inclusive design places users at the very heart of the projects. We have gone from an era of ownership to one of use. We refer, for example, to mobility rather than to cars and we work from home with more permeability between our private and professional lives. It is therefore the fundamental definition of our habits, behaviours and life scenarios that we believed were intangible that have been turned upside down.

Our true ambition is to respond to the needs and expectations of end users, to renew their relationship with space so that it can provide some added value that cannot be accessed remotely. This applies to office buildings but also to shops and public spaces. In the end, it's all about user experience. More than ever, the key to success in the real estate sector lies with understanding how we use space, whether it be imagined or real. Once the script for the use of the given space is written, it becomes about setting the stage and the architect steps in to enhance it.

### **You put forward a 'health policy for cities' to make them simultaneously desirable, inclusive and sustainable. Why and how?**

In our capacity as city players or designers, we become doctors or researchers striving to heal cities rather than to create. Today, we have to learn to live with an element of uncertainty and our role has changed considerably. To reduce, or even neutralise the negative impacts of general urban sprawl on the ecosystem, I propose a health policy for cities to make them desirable, inclusive and sustainable.

Desirable, because today they are stressful and polluted and are no longer a source of well-being. We must generate a 'love for cities' through lifestyles and living spaces. Inclusive, because they incite more and more exclusion. Sustainable, because they consume 80% of the planet's resources while occupying only 2% of its surface.

A target such as this requires a myriad of simultaneous transitions in all the aspects of a city, in particular regarding mobility and nature. The balance is extraordinarily complex to achieve and more than ever before, we must rely on data and a

combination of various forms of expertise. The architect observes the weak signals in the evolutions of lifestyles in order to look forward over at least five years, which is the average time it takes to produce a building. This means stepping out of the agency and comparing different points of view with scientists, geographers, designers, artists and of course, users. It's by capitalising on different forms of expertise that we'll really be able to get to the root of cities' ailments.

### **Do you include citizens in your approach? Can you present other levers to create more inclusion?**

The project manager in an inclusive design approach is in charge of defining the scenario to be adopted and bringing together all stakeholders. Consultations must therefore take place, via collaborative platforms in particular. For the Champs Élysées project for example, we used the platform 'make.org' to request citizens' views, and this

was very successful as it gave 100,000 inhabitants from the Paris region the opportunity to express themselves. In the same way, for architectural projects, the idea is to adopt a horizontal, flat approach rather than a pyramidal approach. Co-construction, more than ever, creates inclusion.

On the topic of inclusion, the evolution that remote working represents could be an interesting avenue of research in imagining a different way of organising the land, not only via the organisation of cities but also in the articulation of cities with regards to one other, with the city centre, inner suburbs and medium sized cities. It will probably take several years to see if companies are transformed by different ways of working, if new technologies are developed and if all this produces clear and quantifiable benefits. It is most certainly one of the most important areas of research for the coming years. ■

[Read the full article here](#)



### **DOMUS AVENTINO : living in an archaeological site**

In the Aventine neighbourhood of Rome, BNP Paribas Real Estate, through its residential programme Domus Aventino, is offering nothing less than a museum within an apartment building. Excavations started in 2014, when an earthquake consolidation project revealed mosaics and various materials dating back to a period between the eighth century BC and the third century AD. Within the framework of a semi-public partnership, the city has launched an operation to protect and conserve the site, which will eventually be opened to the public for guided tours.



# THE POWER OF TEMPORARY URBANISM

**Benjamin Pradel**, who is a sociologist and urban planner, has conducted university research on temporality and mobility. He is also the co-founder of Intermède, an organisation that specialises in the temporary occupation of empty buildings, and a consultant for Kaléido'scop.



**Benjamin Pradel**  
Co-founder of Intermède  
and consultant for  
Kaléido'scop

## Why is urban planning of time and mobility more important than ever?

With the Covid-19 pandemic, certain pre-existing trends have shown the limits of functional urbanism where the pairing of one space to one function makes it difficult for cities to adjust to new, changing and even, in some cases, urgent needs. Without completely overturning the idea of urban planning, this crisis has introduced more flexibility in urban design. It also leads us to reflect on the temporary nature of certain usages and the transitory nature of spaces.

Gradually, mobility and time have become core issues in urban design, because the more we take different usages into consideration, the more we realise that they are not static but that they change according to the seasons, the days and the time of day. In this way, time

becomes a new resource to help reflect on the organisation of space and urban dynamism. Mobility also fits into this temporal equation by including notions of speed and how long we spend travelling from one place to another. In the end, the way we function in our cities concerns space as much as time.

## How can the rhythms of a city match the pace of life?

Whilst the pace of life is more and more heterogeneous and individualised, the rhythms of the city are more connected, in particular in shared spaces such as public transport at peak times or at events with an inflow of tourists, for instance. The post-Fordist society of the 70s was based on massive production rhythms, connected objects, individualised lifestyles or a global service economy, and as a result, schedules were completely





desynchronised. Work and leisure rhythms are far more spread out now and the diversity of lifestyles must be taken into account in urban design, establishing a balance between spaces to breath and non-stop city life.

### What are the benefits of temporary urbanism, in particular by transforming vacant spaces?

Empty buildings, brownlands and wastelands can in fact become resources because, as they are separate from the production and the rhythm of the city, they are temporarily withdrawn from the economic logic of real estate profitability. This gives them the possibility to penetrate cities collectively and in a different way, and thereby create new opportunities. *Plateau Urbain* in Paris, *Intermède* in Lyon, *Entremise* in Montréal or *Communa* in Brussels, are all players who support the temporary use of empty buildings to create hybrid spaces that combine collaborative and co-working spaces, workshops, restaurants and housing units. These experiences raise the issue of real-estate vacancy and transform it into local development, while encouraging functional and socio-cultural diversity. These projects are often mediums

for inclusiveness, by opening up unoccupied spaces and turning them into experiments for various uses and exchanges that can have an influence on urban planning. They make premises available at below-market prices. They can serve as places to house emergency or transitory shelters for vulnerable people.

### Inclusiveness is also based on the collaboration of all stakeholders in urban construction, how can we co-construct in a better way?

This is yet another facet of inclusiveness. Today there are methods, various players and assessments that show that temporary occupation works. For me, there are still a number of challenges for real estate development, including for example identifying unoccupied property

and integrating temporary occupation into development processes, including business plans. All this is of course a source of complexity when notions such as feedback, iterative processes and transition become a part of the project throughout its duration. But at the end of the day, I believe it helps to gain time when it is based on contributions from different stakeholders to co-construct cities in short periods of time. Property development projects have everything to gain from a multiplicity of stakeholders around the table, in terms of flexibility and exhaustiveness. Uncertainty is not something that is usually involved in purely economic approaches but I believe that taking it into account is precisely the challenge today for the different players in urban design. ■



# SPACE AND BUILDINGS THAT CREATE A SENSE OF COMMUNITY

**In cities, co-habitation, social cohesion and inclusion are closely linked. Whilst inhabitants have never been so numerous and as such so connected, paradoxically we are more than ever being confronted with loneliness and isolation. How then can urban design foster a sense of community spirit?**

## **THE DIFFERENT ASPECTS OF DIVERSITY**

Diversity, which is at the heart of harmonious urban development, is about populations (age, ethnic groups, social classes), economic activity, residential and office real estate as well as services (health, education, culture, etc.). These different forms of diversity come together to create social cohesion. The success of the concept developed by Carlos Moreno in 'The 15-minute city' proves that the neighbourhood is a key part in encouraging diversity and versatility.

## **PUBLIC SPACE FOR EVERYBODY**

Pedestrians and green transport now have pride of place in European cities' public spaces. Streets, squares and parks are more peaceful and greener than they've ever been. But if they are to be really 'public' they have to be accessible for everyone. For the Canadian NGO *880 Cities* the challenge is to take both extremes of the population pyramid into consideration: the eight-year old child who is gaining independence but remains

vulnerable and the 80- year old whose physical capacity is diminished in comparison to the rest of the population\*. For *880 Cities* if a public space suits these two different profiles, it'll suit the whole population and will stimulate overall well-being by encouraging people to go outdoors.

## **LEVELS OF SOLIDARITY**

There are more and more grassroots initiatives at the levels of neighbourhoods, districts and cities, to prevent the exclusion of the most fragile members of the population such as homeless and handicapped people for example. The Covid-19 pandemic has triggered a number of solidarity initiatives including the reconversion of certain industries to produce hydro-alcoholic gels, masks or respirators. Community centres have also been transformed into hospitals and hotels into welcome centres for patients. Human beings are more than ever the main players in a city's ability to resist whatever is thrown at it. ■



\* <https://www.880cities.org/about-8-80-cities/>

# RETHINKING CITIES THROUGH NEUROSCIENCE

**Kate Jeffery is Professor of Behavioural Neuroscience at University College London. She believes a better understanding of citizens' cognitive processes could improve the way we design cities.**



**Kate Jeffery**  
Professor of Behavioural Neuroscience at University College London

## What is your field of expertise?

I study the brain's hippocampal system. It's what we use to create a mental map of space and to organise our memories. My focus is understanding how single neurons enable us to create an internal representation of space, a "cognitive map". In my lab, we explore how we navigate complex spaces and form our sense of direction.

## What effect do cities have on the way we think?

Cities nourish our need for resources but they can also be dangerous and disorienting. Their size means we're constantly updating our mental map, forming memories and associations to build up this rich internal representation. If people struggle to form a good mental map for whatever reason, I believe they feel a sense of unease and disquiet. And I think that's something architects need to consider more.

## How can we help people feel more comfortable in cities?

By improving our perception of space. For example, a big curved road can be frustrating. That's partly because you have to go via C just to get from A to B. But also because it's hard to process. If you make a sharp turn, you know which way you're facing. But a road that slowly turns you 90° is disorienting.

Tall buildings have a similar effect, because they reduce visual continuity. I think architects should pay more attention to our sense of direction. I also think engineers will become more important because Covid-19 requires us to rethink space. Today, people want to be together without breathing each other's air. That's going to require some creative thinking, like using air columns to create virtual barriers indoors.

## What can we do to make cities more sustainable?

Architects tend to forget that people are fundamentally selfish and tend to prioritise short-term gain. When designing cities, we need to take that into account. For example, if you want people to take the stairs rather than the elevator, you need to make it the more attractive option.

## How can neuroscience contribute to well-being in cities?

We need more research to understand how people respond to different types

of space – and I think virtual reality could be very useful for this. I have a theory that people are better oriented, and therefore happier, when spaces are visually connected so that they can form a coherent mental map of them all. If that proves true then we could, for example, replace walls with glass to open up visual lines of sight even in crowded parts of the city. I encourage architects to consult with cognitive scientists in the design phase. I truly believe we could help make cities less impenetrable (or "illegible") and much more liveable. ■

[Read the full interview here](#)

**"If you want people to take the stairs rather than the elevator, you need to make it the more attractive option."**

# THE BUILDING BLOCKS OF THE REAL ESTATE SECTOR ARE NOW RECYCLED

The International Resource Panel (IRP) recently showed that natural resource extraction and processing account for more than 90% of global biodiversity loss and around half of global greenhouse gas emissions (GHG)<sup>1</sup>. As Erik Solheim, Head of U.N. Environment stated, “We are using the planet’s resources at a faster rate than they can be replenished, while polluting our seas, air and countryside with the waste from our consumption habits.”<sup>2</sup> With various economies across the globe consuming construction materials at an exponential rate, the IRP report shows that construction and manufactured goods each account for 40% of GHG.

## A GLOBAL COMMITMENT TO CHANGE

There is light at the end of the tunnel however, as thanks to charters such as the **Paris Agreement**, countries throughout the world have pledged to drastically reduce carbon emission.

In 2020 the European Commission adopted the Circular Economy Action Plan, which works to foster sustainable consumption and keep resources inside the EU for as long as possible. One key sector that is targeted by this legislation is the construction industry.

Adopting a circular economy approach is something which is becoming more appealing to multiple real estate actors, with many signing up to initiatives such as the French “Booster du réemploi” (Reuse Booster) which has been signed by around 30 real estate companies, including BNP Paribas Real Estate.

## A CIRCULAR ECONOMY APPROACH FOR BNP PARIBAS REAL ESTATE

The latest BNP Paribas Real Estate quest is their new headquarters, dubbed **Métal 57** because they are to be housed in the old Renault factories, which were set for demolition. The idea is to take the existing structure and breathe new life into it, whilst retaining the spirit of the building. As Caroline Sainderichin, Deputy Director of Tertiary Property Development at BNP Paribas Real Estate points out, “With

Métal 57, we wanted to build the future through a truly sustainable engagement that preserved its heritage. It is an urban and architectural challenge. BNP Paribas Real Estate aims to meet this challenge in order to make Métal 57 a symbolic building for the next generation of office buildings, full of life, sustainable and inclusive.”

Métal 57 is the perfect example of the circular economy in practise, with bricks from the existing building to be used in a mural for the inside passageway and a real and lasting commitment to sustainability and the planet. The objective is to obtain such environmental certifications as HQE and BREEAM in order to demonstrate that this commitment goes far beyond just the building itself. ■



Future headquarters of BNP Paribas Real Estate, Métal 57.

<sup>1</sup> file:///C:/Users/c23873/Downloads/resource\_efficiency\_and\_climate\_change\_full\_report.pdf  
<sup>2</sup> <https://www.unenvironment.org/fr/node/23743>

# CITIZENS' NEW POWERS



**Cities are encouraging cooperation among all public and private stakeholders by capitalising on collective intelligence. Collaborative urban planning is opening up the way for a shared and consistent vision of the future of land.**



## IMAGINING THE FUTURE TOGETHER

Above all, co-construction is about the involvement of all stakeholders who can have different interests and points of view in a project. New ecosystems are emerging, such as in the Paris region of France with *Build the future, live in the future*<sup>1</sup>, a €310M consortium, that brings together 120 associates, including 22 local authorities, and aims to cover the entire housing and construction process to support the ecological and digital transition.

## THE BENEFITS OF CO-CONSTRUCTION

Despite the fact that 50% of European citizens consider that they have little influence over European decisions<sup>2</sup>, there

are, at a local level, a number of initiatives that involve citizens in the elaboration of projects. Co-construction gives inhabitants and local stakeholders the opportunity to weigh in on urban development programmes, it also helps local authorities safeguard these programmes and anticipate possible disputes. Over the last ten years, citizen participation platforms have flourished and reinforced, sometimes even replaced, the traditional public meeting. Eco-districts, local town planning, greening or urban design projects are available for online citizen consultation, co-construction workshops or votes on participatory budgets.

## CITIZENSHIP 2.0

Participatory budgets, that first emerged in Europe in the early 2000s<sup>3</sup>, have taken a leap forward with digital technology. Lisbon was the first European city to use digital technology to manage its participatory budget, as early as 2008<sup>4</sup>. Ten years later, €36M has been injected to support the 139 projects<sup>5</sup> put forward by citizens.

Participative platforms play an essential role in preparing the post-Covid-19 world. For example, the EU opened a platform for a three-month period, from March to June 2020, giving European citizens the possibility to contribute to the construction of the 2030 Climate Plan<sup>6</sup>.

Cities are also built with the people who live in them in mind –from the design phase of urban projects right through to the setting of public policies! ■

<sup>1</sup> Source Région Ile-de-France (<https://www.iledefrance.fr/la-region-ile-de-france-laureate-de-lappel-projets-national-territoires-dinnovation>)

<sup>2</sup> Eurobarometer November 2016

<sup>3</sup> <https://www.lagazettedescommunes.com/279758/les-budgets-participatifs-toute-une-histoire/>

<sup>4</sup> <http://lesbudgetsparticipatifs.fr/le-budget-participatif-de-lisbonne-une-reference-en-europe/>

<sup>5</sup> <https://op.lisboaparticipa.pt/home>

<sup>6</sup> <https://ec.europa.eu/info/law/better-regulation/have-your-say/initiatives/12265-2030-Climate-Target-Plan/public-consultation>

# CAN CITIZENS HELP BUILD BETTER CITIES?

**Roland Greifeld** is Director, Germany-Austria-Switzerland at Civocracy, an organisation that provides a digital platform and consulting for local governments to connect with citizens, helping to bring people and cities together. He explains why citizen participation is essential for creating smarter, more inclusive cities.

## How would you define citizen participation?

For me, it's a system where every voice has the chance to be heard, and every member of society feels that it's possible, safe and impactful to engage. For this to happen, we need to establish a participation-friendly culture, and to equip both administrations and citizens with the right tools.

## Can you give examples of how cities use your platform?

Typically, a city has a one-off project and wants to consult citizens about it. In Lyon, for example, our platform was used to ask schoolchildren to reimagine a square by drawing a picture of it. Contributions were then analysed to identify the most recurrent and relevant needs of the community, and architects transformed those ideas into reality. Alternatively, the platform can be used on an ongoing basis. In Monheim am Rhein, Germany, citizens can post any idea they like. If their idea gets 50 likes, it will be discussed. Several projects have been developed like this, including creating a bike path in place of



**Roland Greifeld**

Director, Germany-Austria-Switzerland at Civocracy

an abandoned railway line. In the province of Noord-Holland in the Netherlands, 10 citizen ideas relating to biodiversity have become official policy recommendations. That's the kind of bottom-up approach we strive for, because the idea comes from citizens; it's not just the city asking for feedback on its own project.

## Is citizen participation on the rise?

Yes, and three factors are driving this trend. First, governments know there is a crisis of democracy and that polarisation threatens them and their finances. To regain trust, they need to be more transparent. Second, citizens are used to posting on social media and are more open to participatory digital models. Finally, Covid-19 has accelerated the need for digital tools. These trends align with Civocracy's belief that inclusive cities require an ongoing back-and-forth dialogue between citizens and administrations.

## What is the future of citizen participation?

I think we'll see a consolidation of the civic tech market, with mergers and collaborations. I truly believe we will evolve towards a more flexible model of democracy with more topic-based engagement – and that, 20 years from now, every smart city will be highly participative. ■

**“We need to establish a participation-friendly culture, and to equip both administrations and citizens with the right tools.”**



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