CREATING ENVIRONMENTS CONDUCIVE **TO HEALTH AND WELL-BEING**

#8



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"Health is a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity". This is how the WHO has been defining health since 1946. Yet health is still too often reduced to care.

While care is essential during illness, the overall health status of a population goes beyond this purely curative approach and depends on the interlinking of a multitude of biological, behavioural, socio-cultural and environmental factors. Action on these "health determinants" is essential to prevent chronic illnesses and the loss of autonomy, which are major current public health issues[1], but also to fight against growing social and regional health inequalities[2].

These determinants are strongly rooted in regions: they concern the quality of the air we breathe, the water we drink, the social relationships we have, the food we eat and the opportunities we have to be physically active and in contact with nature. The local scale therefore appears particularly well-suited to mobilising levers for action and promoting a cross-cutting approach to health. This is the aim of the Healthy Cities programme developed by the WHO in 1987 and implemented via a worldwide network of Healthy Cities.

Urban planning approaches tailored to health as well as health impact studies supported by scientists have emerged to meet this need. Questions such as: How can we design "healthy" living environments that maximize the benefits of protective factors and minimize exposure to risks, both in their design and future use while taking into account the needs of all populations? arise.

Designing regions, cities, neighbourhoods and islands that are conducive to health also means supporting major transformations of the health system, by locally developing solutions that meet current challenges: development of outpatient care, multi-professional grouping of practitioners, optimisation of medical time, development of prevention approaches and a comprehensive approach to health promotion, emergence of e-health to combat the compartmentalisation of the health system, medical desertification, the lack of private practices and the saturation of the emergency services.

By identifying these current and emerging trends, this document explores the levers for action to meet these challenges. New ideas are sourced from regional organisations, the building industry, services associated with new medical practices and emerging literature on the "inclusive city".

Enjoy reading!

[1] Source: Responsible for 63% of deaths, chronic illnesses (heart disease, stroke, cancer, chronic respiratory diseases, diabetes, etc.) are the leading cause of death in the world. (WHO)
[2] Source: In France, the life expectancy of the richest 5% of the population is thirteen years greater than that of the poorest 5% (INSEE, 2018)

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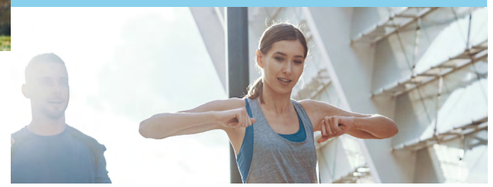
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CREATING ENVIRONMENTS CONDUCIVE **TO HEALTH AND WELL-BEING**



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Today, the complexity of cities, their growing importance, the increase in needs, the pressure due to diminishing resources and also the visible socio-economic fractures in the social fabric highlight the need to look at urban health in a different way.

In a few decades' time, our cities will be the living environment for almost all of humanity in a world that is already predominantly urbanised.

Nowadays, all over the world, cities are where the life cycle essentially develops. From birth to death, the urban world is primarily the universe, space and time of human beings. Being born in a city means already belonging to a city culture, marked by the rhythm and way of life of cities, metropolises and mega-cities. From childhood to adolescence, from the transition to adulthood to ageing, several urban life universes coexist.

It is essential that all players in cities reflect upon the consequences of this phenomenon with regard to human health and the impact on our quality of life, which is the essential indicator of living together successfully.

The World Health Organisation has said that,"(health) is not merely the absence of disease or infirmity but a state of complete physical, mental and social well-being". It has been clearly demonstrated that health and well-being, in their various physical, mental and social components, are closely interlinked and profoundly interdependent.

Health is influenced by many factors, first and foremost that of the living environment and the emergence of new forms of community life in cities, linked to social, cultural and family interactions and changes, etc.

Urbanisation leads to problems such as noise, urban stress, natural and/or anthropogenic risks, a lack of road and food safety, the impacts of climate change, pollution, etc. These make cities vulnerable to the development of pathologies, some of which are recent, such as high blood pressure, cardiovascular diseases, asthma, diabetes, allergies and obesity (generally due to a sedentary lifestyle). Cities must take care of the health of their residents by providing solutions that address the environmental, economic and social elements of sustainable urban planning. The aim is thus to propose a viable, liveable, equitable city, which, in its organisation and operation, must incorporate the health dimension into its primary objectives.

In this period of major change, it is essential to approach health from a systemic, urban eco-health standpoint. By understanding the urban fabric, anticipating changes in lifestyle and evolving relationships of residents with their regions, we can move towards a living city.



Virginie Alonzi

Bouygues Construction Strategic Foresight Director

Health and well-being are currently a major concern of populations; it is estimated that 48,000 deaths per year in France are due to air pollution, according to the study by Santé Publique France published in 2016. In a rapidly changing world, the societal aspiration to live in a healthy environment is a major challenge. According to the second edition of the ObSoCo-Chronos "Observatoire des usages et représentations des territoires" ("Observatory of uses and representations of regions"), published in February 2020 and of which Bouygues Construction is a partner, more than half of French people would like to "live elsewhere" if they had the opportunity (while more than three-quarters of the French population live in towns and cities), with a desire to live close to nature that remains very strong.

Today, various factors directly linked to our living environment and to the urban environment have an impact on our health and well-being: the quality of air, of water, of soil, noise, biodiversity, buildings, changing lifestyles, growing urbanisation, mobility, etc.

Promoting quality of life is a real challenge for regions and it is through a systemic approach that incorporates all health determinants (individual, socio-economic, environmental and those related to urban and regional policies) that we will be able to elaborate urban and regional development from the point of view of uses and act to design inclusive living spaces that are conducive to the health and well-being of individuals.

So how is a city, neighbourhood or building that is conducive to our health and well-being designed, built or renovated? How is a property development project or an urban project that maximises the positive impact on our health while reducing risk factors designed?

It is in this context that Bouygues Construction, as a player in the urban and regional ecosystem, has led this open and collaborative initiative with experts and players in the health and well-being sector, property development and urban players, start-ups, sociologists, architects, companies and associations. The aim of this initiative was to share best practices and ideas, as well as come up with proposals for the incorporation of these new paradigms into property development and urban projects.

In 30 years, two thirds of humanity will be living in cities, which presents a major challenge for the years to come! Bouygues Construction is a responsible and committed player and, through its subsidiaries, incorporates these issues of health and well-being via its eco-design approach to designing, building or renovating buildings that respect our people. At the city level, Linkcity develops property development projects that take into account the sense of well-being of future residents, while committing to the preservation of our shared assets, namely health and the environment.

Better understanding the changes that are in progress, anticipating future breakthroughs and accompanying change were at the heart of this open, multi-partner approach to designing healthy, living and inclusive cities!

01. Global developments with an impact on health and society



All over the world, human societies are ageing

Tomorrow, there will be more and more dependent people for longer and longer periods of time. We are living longer but healthy life expectancy is stagnating due to the growth of chronic illnesses. These illnesses, such as mobility problems or disabilities, can affect the entire population and challenge the organisation of our health systems. Better care is no longer enough. The difficulties linked to our urban lifestyles (poor health practices, pollution, lack of physical activity) must also be addressed, and confidence and resilience restored in a context of multiple global crises. To do this, we have tools at our disposal (including digital technology) which can be a lever for action, provided that they are used for the benefit of collective intelligence and usage intelligence.

A demographic transition





The population is ageing

Since 2015, in France, there have been more people
over 60 years old
than
under 20 years old[1]

The French are living longer but **their healthy life expectancy remains stable**

In 2018,
life expectancy at birth was

85.3 years *for women*

79.4 years *for men*[2]

Healthy life expectancy is **64.5 years** for women

and **63.4 years** for men

Between 2006 and 2016,
it remained stable, while life expectancy at birth increased by **2.2 years** for men and **1.2 years** for women[3]

Although France is among the top-ranking countries in terms of life expectancy at birth, it is fairly close to the European average for healthy life expectancy[4]

More and more dependent people for longer and longer periods of time = supporting the loss of autonomy

In 2015,
2.5 million
elderly people were living with diminished autonomy (requiring help to move around, dress themselves or groom themselves[5]*)*

Among these people, **700,000** were considered **to be severely dependent**
(situations of confinement to bed or chair and/or observation of impaired mental functions)

78% *lived at home*

22% *in care facilities*

If recent demographic trends and the improvement in health status continue,
France could have
4 million dependent senior citizens in 2050[6]

The estimated number of adults providing regular assistance to an elderly relative at home[7] **is estimated at**
3.9 million



[1] Source: French economy tables, INSEE, 2016
[2] Source: Etudes & Résultats, no. 1127, October 2019, Direction de la Recherche, des Etudes, de l'Evaluation et des Statistiques (Directorate for Research, Studies, Evaluation and Statistics, DREES)
[3] Source: Etudes & Résultats, no. 1046, January 2018, Direction de la Recherche, des Etudes, de l'Evaluation et des Statistiques (Directorate for Research, Studies, Evaluation and Statistics, DREES)
[4] Source: Direction de la Recherche, des Etudes, de l'Evaluation et des Statistiques (Directorate for Research, Studies, Evaluation and Statistics, DREES)
[5] Source: Insee Première, July 2019
[6] Source: Insee Première, July 2019
[7] Source: DREES, care-givers Care survey, 2015

Resurgence
of infectious epidemics and development of chronic diseases

Glossary

Chronic illness: a long-term, progressive disease with an impact on daily life. Chronic illness can lead to disability and even serious complications[1]

Long-Term Illness (LTI): a mechanism in place since the creation of the social security system to enable the management of patients with a chronic illness involving prolonged treatment and costly therapy[2]

Ecosystem change + **Resistance to treatments for infection** + **Stronger promiscuity between humans and animals** =

Emergence and re-emergence of infectious diseases in recent decades:

- Diseases resulting from animal-to-human transmission: Ebola, H5N1, Marburg, MERS, coronavirus, etc.
- New diseases: HIV, BSE, meningitis W135, etc.

In 2017,
10.7 million
people in France benefited from the National Health Insurance body's LTI mechanism, in other words,
17%
of insured persons. Compared with
8.3 million
representing
14.6%
of insured persons, in 2008[3]

The prevalence of chronic illnesses is increasing, in particular due to the ageing population and longer life expectancy

More than one third *of the French population has a chronic illness*

20 million *people are concerned**

in other words, **35%** *of the population according to the National Health Insurance body*

*Expanding the scope to include all people who consume healthcare related to a chronic illness, with or without formal LTI recognition

In 2016, the most frequent LTIs

Diabetes: **2.6 million** *cases*

Malignant tumours: **2 million** *victims*

Long-term psychiatric conditions, *excluding dementia such as Alzheimer's disease:* **1.3 million** *people*

Significant increase: heart failure, heart rhythm disorders and heart disease: **+18.6%, in other words, 1.1 million cases**



Risk factors persist



The rate of obesity (BMI (Body Mass Index) >= 30 kg/m²) in France is rising

10% in the early 2000s

15% in 2014[4]

In 2014, only 25% of French people over the age of 15 complied with the WHO recommendation to engage in at least two and a half hours of sport and leisure activities per week[5]

In 2014, only 14.9% of French people over the age of 15 complied with the dietary recommendations of the National Health and Nutrition Programme (five or more portions of fruit and vegetables per day)[6]

Decrease in alcohol consumption but increase in heavy binge drinking (HBD = 6 or more drinks consumed on one occasion)

38% **increase** in tobacco-related mortality among women between 2000 and 2013[7]

An epidemiological transition

“Social” and non-biological illnesses linked to the lifestyles and consumption patterns of post-industrial societies



50%
of French people feel very stressed or quite stressed[8]

Main causes



Professional life, financial problems, personal life

Main consequences

Repercussions on sleep quality and behaviour (nervousness, etc.) and on family and professional life

but also

Heart problems, headaches, addictions, etc.

Moderate decrease in the consumption of medication for anxiety or insomnia

France ranks second in terms of benzodiazepine* consumption in Europe, behind Spain[9]



* Molecules indicated in the treatment of anxiety, severe sleep disorders and epilepsy

[1] Source: Ministry of Solidarity and Health
[2] Source: National Health Insurance body
[3] Source: National Health Insurance body, ameli.fr
[4] Source: L’état de santé de la population en France (Health status of the French population), 2017 Report, DREES, Santé Publique France
[5] Source: European Health Survey. Health and Social Protection Survey, September 2017, IRDES
[6] Source: European Health Survey. Health and Social Protection Survey, September 2017, IRDES
[7] Source: L’état de santé de la population en France (Health status of the French population), 2017 Report, DREES, Santé Publique France
[8] Source: “Les Français et le stress” (“The French and stress”), OpinionWay survey conducted for the Ramsay Générale de Santé Foundation, October 2017.
[9] Source: Situational analysis of benzodiazepine consumption in France, April 2017, Agence du médicament (French National Medication Safety Agency, ANSM)

The anxiety-provoking **perception of a "multi-risk" society**

Multiple crises occur one after the other and make the population feel that they are living in a state of permanent threat a phenomenon accentuated by globalization



General climate disruption linked to global warming: droughts, heat waves, storms, etc.

Geopolitical tensions

Financial crises

Significant increase in emerging illnesses and diseases with epidemic tendencies: severe acute respiratory syndrome (SARS) in 2003, H5N1 avian influenza (2004), H1N1 swine influenza in 2009, Ebola (2014), Zika (2015), Coronavirus Covid-19 (2019)*

*A problem for all countries, including those with high standards of living and well-developed health systems. Examples: SARS particularly affected affluent urban areas and spread easily in the most modern hospitals

Scandals that affect public confidence in figures of authority and industrial players

Phytosanitary scandals

Recurrent food scandals
(ready-made meals containing horse meat (2013), infant milk contaminated with salmonella (2017), etc.)

Health scandals
(asbestos, breast implants, drug-related scandals, etc.)

A growing mistrust of an intensive, global economic model, considered complex and lacking in transparency

Focus on confidence in food products

70% of French people feel that they lack information on the quality of the food products they consume[1]

The French have more confidence in consumer associations and farmers than in scientific experts and NGOs to provide them with information on the quality of food products



[1] Source: Les Français et la confiance alimentaire (The French and confidence in food products), IPSOS for Respect In, November 2013. Health and Social Protection Survey, September 2017, IRDES

A world under **urban influence**



Mass urbanisation is accelerating[1]

2018:
55%
of the world's population lives in urban areas
Forecast for 2050:
68%

In 2018,
1 in 8 people
in the world live in a mega-city of more than **10 million** residents

Nearly half of the world's population lives in a city of less than **500,000** people

In France, **95%** of the population lives in an area under the influence of cities[2] (in terms of consumption practices, employment, etc.)

Attractive metropolises...
Attractive from the point of view of employment and access to diversified resources[3]... **but difficult to live in?**

An environment with constraints: the example of noise from transport

On average, a person who lives in Ile-de-France loses **10.7 months** *of healthy life due to the transport noise they have been exposed to*

87%
*of the residents of the densely populated Ile-de-France area live in housing exposed to noise levels that are too high for a quality night's sleep **

*Threshold set by the WHO. Source: Impacts sanitaires du bruit des transports dans la zone dense de la région Ile-de-France (Health impacts of transport noise in the densely populated Ile-de-France region), Bruitparif, February 2019

More diluted **local sociability**

Between 2010 and 2013, **isolation grew more rapidly in urban areas (+5%) than in rural areas (+1%)**

Large cities concentrate inequalities.
In France, urban areas are on average richer than rural areas, but the gap between rich and poor is wider and disadvantaged populations are poorer compared to rural areas

19.5% of the population lives below the poverty line in city centres
(national average: 14.3%)[4]

25% of people living in cities with more than **100,000** residents and **12%** of people living in rural areas never stop to chat while shopping or walking through their neighbourhood

Small and medium-sized towns in search of vitality

The increasing power of certain metropolises has been accompanied by a **feeling of increasing regional inequalities** and/or a feeling of disengagement for many households living outside metropolises, particularly in rural towns and small and medium-sized towns[5]

The feeling of a lack of local services and pessimism regarding the future of city centres

The four elements
that have deteriorated the most in medium-sized towns according to their residents:

Healthcare provision
40% of the residents of medium-sized towns consider that healthcare provision has deteriorated

Public service provision
40% of the residents of medium-sized towns consider that public service provision has deteriorated

Employment
38% of the residents of medium-sized towns consider that employment opportunities have deteriorated

Commercial vitality
39% of the residents of medium-sized towns consider that commercial vitality has deteriorated

[1] Source: United Nations, Department of Economic and Social Affairs, Population Division (2019). World Urbanisation Prospects 2018
[2] Source: Le nouveau zonage en aires urbaines (New zoning in urban areas), 2010, INSEE
[3] Source: survey by the Observatoire de la démocratie de proximité (Local Democracy Observatory), AMF-CEVIPOF/SciencesPo, 2019
[4] Source: Observatoire des inégalités (Inequality Observatory), INSEE data, 2012
[5] Source: Les métropoles: apports et limites pour les territoires (Metropolises: contributions and limits for regions), Conseil économique, social et environnemental (Economic, Social and Environmental Council), 2019

A digital **society**



Digital and technological innovation is shaking up society as a whole

1.7 MB
of data produced per person per second worldwide in 2020[1]

Ultra-dominant American and Chinese digital giants (GAFAM, NATU, BATX),
who shape the global economy and whose sales and market capitalisation exceed the GDPs of many nations

Total stock market capitalization of Google, Apple, Facebook, Amazon:
$3,490 billion

France's GDP in 2018:
$2,775 billion[2]

Emergence of societal debates related to the digital revolution:
- Democratisation of the access to knowledge
- Revitalised political space
- An unequal world that is under surveillance?
- Freedom of expression reinforced or personal freedoms trampled upon?

In the medical field, the development of nano-technologies, biotechnologies, IT and cognitive sciences, grouped under the acronym NBIC, is leading to the emergence of new fields:
- Genetics
- Molecular biology
- Robotics
- IT modelling of biological reactions and remote medicine[3]

Top three advantages related to the use of digital technologies:

Facilitation of daily life

Staying in contact with loved ones

- *Saving time (Europe)*
- *Opening up to the world (Africa)*

Top three fears related to the use of digital technologies:

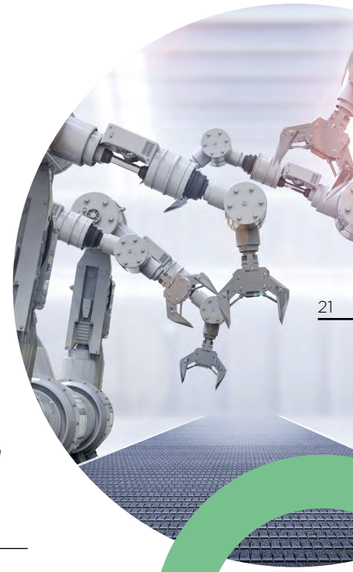
Protection of personal data

Unreliability

Risk of dependency (Europe)/health risks (Africa)[5]

Connected health services: a strong development potential

In France,
14%
of digital users have already tried remote medical consultation, in other words, 8 points more than in 2018[4]



In France,
66%
of digital users consider themselves dependent on digital tools, and
13%
very dependent

In the United Kingdom,
74%
of digital users consider themselves dependent on digital tools, and
20%
very dependent[6]

[1] Source: IDC estimation
[2] Source: Ycharts, Insee
[3] Source: Observatoire des usages du digital (Digital technology usage observatory), 2019, OpinionWay/Orange
[4] Source: La santé en 2030 (Health in 2030), Asteres, 2015
[5] Source: According to digital users in nine countries (South Korea, Ivory Coast, Egypt, Spain, the United States, France, Morocco, the United Kingdom, Senegal)
[6] Source: Observatoire des usages du digital (Digital technology usage observatory), 2019, OpinionWay/Orange

02. Development of health and well-being practices



There are many signals from a society that is increasingly attentive to its health

Recommendations in terms of prevention are widely known; the well-being industry is growing; individuals are becoming players in their own health, are embracing alternative medicines and are exploring the opportunities offered by m-health (health-related services available via a smart phone or tablet). At the same time, however, poor health practices and sedentary lifestyles are not decreasing, and people are increasingly turning away from healthcare for financial reasons or due a lack of access to care. This dichotomy is indicative of a health system in crisis and of the social and regional inequalities in health that persist.
The transformation of the health system that is currently in progress and that is moving towards outpatient care, patient-centred medicine, a regional reorganisation of the provision of healthcare and the decompartmentalisation of the hospital, “city” and medico-social sectors aims to meet these challenges.

New health and well-being uses

Health and well-being, major concerns of populations

All around the world, health is one of the major concerns of populations.

In 2019, the French made health and well-being a priority ahead of employment, education and the environment in the annual national barometer of public services[1]. This was a first since the creation of this opinion survey, which celebrated its fifteenth edition. This result was probably fuelled by concerns about the future of public hospitals, but also by the conviction that good personal health and that of one's loved ones is a prerequisite for a fulfilled and balanced life.

In contrast to a purely physiological definition of health, the French tend to equate "good health" with being in good spirits and feeling good mentally[2]. This is a disposition they consider indispensable for developing a capacity for resilience in the face of life-related problems (including possible physical health complications).

Good personal health and the good health of one's loved ones is a prerequisite for a fulfilled and balanced life



Health concerns of 18-30 year-olds

The themes that concern young people the most are as follows:

21%	Mental health
19%	Endocrine disruptors
18%	Access to doctors

The survey highlights a variety of concerns related to societal well-being, environmental health and the quality of the healthcare system

Source: #MoiJeune survey, 20 Minutes/Opinion Way, 2019



Public opinion is concerned about the future of the healthcare system

The opinion surveys carried out in recent years on the medical system in cities found that the French have a very favourable opinion of their doctors but are concerned about the future of the national health system.

In particular, criticisms of the health system focus on the issue of accessibility to healthcare and medical deserts; these are considered to be the major challenges facing the medical system of the future. The public hospital crisis is also feeding the perception of a progressive decline in the quality of hospital care.

The perception of the future of medicine is rather pessimistic: more than 90% believe that it will be more technological and more expensive and 75% fear that it will become less human. This is a trend that they believe has already begun, since nearly on in four French citizens feel that the human relationship between patients and health professionals is deteriorating[3]. Interestingly, patients consider that relational criteria, such as empathy and the quality of listening, are as important as the thoroughness of the clinical examination and the quality of the treatment prescribed, at least with regard to the choice of their attending doctor[4].

[1]Source: Barometer published by the Institut Paul Delouvrier, in partnership with the Inter-Ministerial Directorate of Public Transformation, as part of its mission to redefine and renew public action
[2]Source: IFOP/Capital Image study, 2014
[3]Source: Survey by the Académie de Médecine on the perception and image of medicine and doctors, OpinionWay/ Académie Nationale de Médecine, 2020
[4]Source: Bénédicte Bleuse, Déterminants influençant le choix du médecin traitant par son patient (Determinants influencing the patient's choice of attending doctor), 2016

The French have a very favourable opinion of their doctors

88%	87%	84%	81%
satisfied	**satisfied**	**satisfied**	**satisfied**
Healthcare provided by general practitioners	Level of information provided by general practitioners	Time given by general practitioners during consultations	Healthcare provided by specialist doctors

Source: DREES Barometer, Qualité et accès aux soins: que pensent les Français de leurs médecins? (Quality of and access to healthcare: what do the French think of their doctors?), 2017

A feeling of a lack of doctors

29% of French people believe that there **are not enough general practitioners** near their homes. This figure rises to **47%** for specialized doctors.

Source: DREES Barometer, Qualité et accès aux soins: que pensent les Français de leurs médecins? (Quality of and access to healthcare: what do the French think of their doctors?), 2017

The image of public hospitals is deteriorating

Dissatisfaction following a hospital stay:

2015 • 9% ▶ 20% • 2017

Three-quarters of French people think that hospital care will deteriorate in the future.

Source: Baromètre santé 360°: Les Français et l'hôpital de demain (360° health barometer: The French and the hospital of the future), Odoxa/Orange Healthcare, MNH Group, FHF, Le Figaro Santé, France Inter, 2017.



Everyone is becoming a player in their own health

Citizens are increasingly taking charge of their own health. Mistrust of healthcare facilities and industries linked to health scandals, and skepticism regarding vaccinitation is on the rise. A decrease in accessibility to healthcare, and an increase in the empowerment of individuals combined with the explosition of digital tools is giving rise to new practices that bypass conventional medicine and embody the 'healthism' movement in which everyone is responsible for their own health.

Unconventional healthcare practices are popular among citizens

The WHO lists more than four hundred of them, based on biological therapies (herbal medicine, aromatherapy), "mind-body" approaches (hypnotherapy, sophrology), techniques based on manipulation (osteopathy, chiropractics) or holistic approaches based on their own theoretical foundations (homoeopathy, acupuncture).

Their success is based on a feeling of effectiveness, ease of access, a perception of them being 'more natural' than conventional drugs, and on their range of applications. These fields of application include: preventative medicine, treatment of mental disorders and their manifestations (anxiety, stress, insomnia, etc.) and relief of pain related to chronic pathologies.



In France, alternative medicines are widely popular amongst the population:

68% of French people

surveyed are convinced of the benefits of alternative and complementary medicine. This figure rises to 85% for osteopathy and 78% for acupuncture.

1 in 3 people

regularly uses alternative medicine. Homeopathy is a special case since it is firmly rooted in the health practices of the French; more than 3 out of 4 have previously used it.

Source: Baromètre santé 360, Les médecines alternatives et complémentaires (360° health barometer, Alternative and complementary medicine), Odoxa/Orange, Nehs, Asip-Santé, SciencesPo, 2019



Self-measurement of health is growing

The practice of the quantified self emerged in 2007 in Silicon Valley and aims to promote self-knowledge through the autonomous measurement of data relating to one's body and activities.

Multiple physiological and cognitive parameters can be measured through wearables, which are connected objects that can be worn on one's body (watches, bracelets, blood pressure monitors, clothing, activity trackers, etc.). Number of steps, number of calories consumed, glycaemic index, heart rate, blood pressure, sleep duration, etc.: data collection enables the production of a number of personal metrics, which are available to both clinical populations and healthy individuals. These mechanisms are based on the principles of ranging and sharing, and even comparison between users, which can be a source of motivation to improve one's overall lifestyle, eat a balanced diet or take up sport.

Beyond this personal use, connected objects can also have a medical application and become real aids for caregivers to monitor chronic pathologies, analyse effectiveness or observe compliance with a treatment. The patient becomes more autonomous through self-measurement practices and the role of the doctor changes, focusing more on support and the patient's quality of life.



The patient-expert, a new healthcare player

The concept of the patient-expert, which appeared in Anglo-Saxon countries in the 1970s, considers the patient as a resource, both for medical teams and for other patients suffering from the same pathologies.

Their expertise, their knowledge of their illness and their experience of living with the illness on a daily basis justify the involvement of the patient in therapeutic education programmes and in the improvement of the management of chronic illnesses. In France, the practice grew rapidly in 2009 with the Hospital, Patient, Health and Region Act, which defines the framework for this commitment, and the creation of a Patient University that trains and awards diplomas to patients, so that they may become trainers, educators or facilitators.

In general, patients are increasingly well-informed and involved in the management of their illness. They come together in patient associations and organise themselves online as communities, in order to seek medical information, share experiences and find support. Whether general in nature or specialised in certain pathologies (particularly acute or chronic illnesses), they enable patients and their families to maintain a continuous link with patients suffering from the same pathologies. Some provide access to relatively specialised information. This is the case, for example, of the smartpatients.com community, which provides information on the latest treatments available and lists searches for volunteers for clinical trials. This new patient status is not always favourably perceived by the medical profession, which is concerned about the associated risks (transmission of erroneous information, etc.).



Preventive practices and attention to healthy living are increasing

Prevention is becoming an increasingly important part of health practices, whether it involves using health services as a preventive measure or changing one's behaviour and habits to improve one's lifestyle.

For example, 76% of French people have already considered consulting a doctor or a healthcare centre as a preventive measure, without having any particular health problem to treat[1]. Specific preventive check-ups for certain cancers (colorectal, cervical, breast, etc.), overall health check-ups and vaccinations are the most common preventive consultation procedures.



76%

of French people have already considered consulting a doctor or a healthcare centre as a preventive measure

Healthy living encompasses habits and behaviours to be adopted in daily life, in order to maintain a balance between good physical and mental health. These factors include: quality of sleep, a balanced diet, physical activity, reduction of high-risk behaviours (tobacco, alcohol, drug consumption, etc.), time allocated to relaxation and leisure, effective stress management and emotional and mental well-being. It is not always easy to find the right balance between our personal preferences and desires, the constraints and obligations related to our lifestyles, our personal and professional situations, our financial capacities and the ability to change our behaviour and habits. 63% of French people say they frequently apply the recommendations they are aware of, while only 8% apply them systematically[1].

Behaviours in terms of physical activity show a discrepancy between what medical professionals consider priority development areas and the level of change in actual practices[1]

Behavioural changes related to health and prevention

Preventive behaviours considered most important by doctors

Giving up smoking

(77% of doctors check this behaviour as one of the two most important from a list of 11 options)

Practising a sporting activity on a regular basis

(at least one hour a day) (36% of doctors check this behaviour as one of the two most important from a list of 11 proposals)

Behavioural changes

79%
of French people say they are changing their behaviour to consume more fruit and vegetables, and 36% declare that they do this systematically

72%
of French smokers say they are changing their behaviour to limit their consumption of tobacco, and 58% declare that they do this systematically

48%
of French people say they are changing their behaviour to practice a sporting activity on a regular basis, and 18% declare that they do this systematically



Prevention behaviours driven by awareness-raising and the well-being industry

The majority of French people consider themselves well-informed regarding the lifestyle behaviours they need to adopt to preserve their health in the long term[1]. They have been made widely aware of these, most often by their attending doctor.

The increase in these prevention practices is partly explained by the belief in the effectiveness of this type of approach, which is shared by healthcare professionals and the population alike. 57% of French people believe that it is more effective to improve prevention than it is to be able to better treat people when they are ill[2].

For some people, this conviction is accompanied by a real interest in health and well-being practices, to the point of making them a daily pursuit. The «business» of «wellness» is booming, as shown by the proliferation of yoga and meditation centres, corporate gyms, treatments, functional foods and new food trends, etc., not to mention the numerous mobile applications that enable people to develop and monitor their sporting or nutrition programmes and share their achievements on social networks. It is currently fashionable to take care of oneself and listen to one's body and mind, sometimes to the point of becoming a moral imperative: the syndrome of a consumer society marked by abundance, hyper-connection and chronic stress?

[1] Source: Survey by the Académie de Médecine on the perception and image of medicine and doctors, OpinionWay/ Académie Nationale de Médecine, 2020
[2] Source: Health and prevention barometer, ODOXA/Nehs, Health Chair of Sciences Po, Le Figaro Santé, France Info, 2019

It is currently fashionable to take care of oneself and listen to one's body and mind

57%

of French people believe that it is more effective to improve prevention than it is to be able to better treat people when they are ill[2]

Is digital technology an opportunity to develop health prevention?

51%
of French people use at least one food scan application (for example, flashing products to obtain information on their nutritional quality) or physical activity measurement application (for example, a pedometer)

However, few people use them regularly

11% **for food scan applications**

15% **for physical activity measurement applications**

Technologies, applications and connected objects exist but their uses for prevention purposes have yet to be defined.

Contrasting health practices, reflecting social and regional inequalities in health

Beyond these major trends, health practices are highly contrasted within the population, under the influence of many factors: socio-economic characteristics (age, gender, socio-professional category, income level, etc.), living and working conditions, access to healthcare, health and social policies, etc.

Prevention practices are indicative of these disparities. The health barometer on health and prevention in France carried out in 2019 for the Health Chair of Sciences Po and Nehs notably illustrates two types of disparity: generational and socio-economic. Among the limitations to good health and daily prevention behaviours, some stood out as particularly significant: the lack of financial means for workers, the lack of motivation for those over 65 years of age, and the lack of time for privileged socio-professional categories. Similarly, the level of knowledge in health and prevention and the application of good health behaviours increases significantly with age, level of education and belonging to privileged socio-professional categories.

In terms of healthcare, the non-seeking of care is indicative of the social and regional inequalities that weigh on health practices. The survey on access to healthcare carried out in 2019 for France Assos Santé shows the diversity of factors that come into play.





The non-seeking of care is indicative of the social and regional inequalities that weigh on health practices

63% of French people have already given up on or postponed receiving healthcare

77% for people with disabilities

74% for the 25-34 age group

72% for people whose net monthly income is less than €1,500

Reasons for giving up on or postponing care



Waiting time too long before getting an appointment	44%
Remaining cost too high (after reimbursement from the social security body and health benefits)	41%
Inability to pay fees up front	30%
Lack of doctors within a reasonable distance of home	25%

Development of health systems towards new modes of organisation

In France, the medical care of populations and care pathways are organised around three main types of structures that form the basis of the national health system:

- **outpatient facilities for so-called "city" healthcare:** private practice surgeries, paramedical professions, medical biology laboratories, dispensing chemists;
- **healthcare facilities for hospital care:** general hospitals and psychiatric hospitals, public or private, for short or long-stay care and follow-up or rehabilitation care;
- **medico-social care for so-called vulnerable, elderly or disabled populations:** EHPADs (Etablissements d'Hébergement pour Personnes Âgées Dépendantes or nursing homes in English), etc.

A health system in crisis

Today, this model is facing several problems that require the organisation of the system to evolve.

Medical deserts, a rural and urban phenomenon

Regional health development is unbalanced due to a significant dichotomy in the regulation of the provision of healthcare: while the hospital system is regulated, the State does not control the provision of healthcare in towns, where private practitioners are free to set up practice.

This specificity partly explains the current difficulty in combating medical deserts, which are areas where the medical services available are insufficient to meet the needs of the population. Almost the entire French population (98%) lives less than 10 minutes away from a general practitioner and only 0.1% of the population, in other words, around 52,000 people, have to travel more than 20 minutes by car to see a general practitioner[1]. However, if, beyond access time alone, a more comprehensive approach is adopted, which takes into account the availability of medical services, the population's healthcare needs and their travel times, **then nearly 5.7 million French people live in a community that is "under-dense" in terms of general practitioners.** The figures are even higher if specialists are taken into consideration (gynaecology, paediatrics, cardiology, etc.). All regions are affected, both urban and rural: a quarter of the population living in an "under-dense" community in terms of general practitioners lives in an urban centre.

Available medical time is reduced

Medical demographics alone do not explain this situation, although France is slightly below the average for OECD countries in terms of the density of doctors per resident (France: 3.2 doctors per 1,000 residents; OECD: 3.5 doctors per 1,000 residents)[2] and could see its situation deteriorate due to the ageing of the profession (almost one in three doctors is over 60 years old) and the many retirements to come.

However, the explanation lies mainly in the organisation of working time. This is illustrated by the declaration of a general practitioner practising in Paris, published in the *Après-Demain journal*[3], which highlights the decrease in medical time and relates the daily obstacles to the time devoted to his patients: more and more numerous and time-consuming administrative tasks, involvement in teaching, increasingly long consultations, participation in interdisciplinary meetings.

The sociology of medical professions also comes into play, with a feminisation of the profession and a partialisation of working time that mechanically reduces the provision of healthcare.

Young doctors "settle down" less

The constraints on available medical time, changing aspirations (preservation of family life and leisure time, etc.) and the discrepancies between healthcare supply and demand in certain areas are fuelling a growing lack of interest among young medical graduates in "settling down".

This loss of attractiveness in turn fuels the phenomenon of medical deserts. **63% of new doctors are salaried employees, a much higher proportion than among all practising doctors (43%)[1]. And two thirds of young private or mixed practice doctors work as replacements.**

In their current configuration, hospitals are not suitable for the management of chronic illnesses.

While remarkable for treating acute episodes of a pathology or for performing operations, hospitals are not organised to meet the long-term needs of people who are ageing or suffering from chronic illnesses, which are growing significantly.

According to the National Health Insurance body, more than a third of the French population is concerned, a figure that is set to rise as the population ages. This major change in the health requirements of populations requires a major transformation of the health system.

[1] Source: Etudes & Résultats, DREES, May 2018, no. 1061
[2] Source: Panorama de la santé 2019 (Health at a Glance 2019), OECD Indicators: How does France compare?
[3] Source: "Temps de travail médical disponible: témoignage" (Available medical working time: testimony), A. Scemama, Après-Demain, no. 42, 2017

Moving towards pathway medicine orchestrated around patients

Today, new organisational modes are at work, governed by national health policies and laws that have come into force in recent years:

- **Hospital Reform Act relative to Patients, Health and Regions (2009);**
- **Health System Modernisation Act (2016);**
- **Law relating to the organisation and transformation of the health system (2019),** which includes some of the measures of “Ma santé 2022”, a plan unveiled by the executive in September 2018 to reform the French health system.

These reforms tend towards patient pathway-centred medicine that combines prevention, healthcare and medico-social monitoring. The aim is to move from a system centred on hospitals and based on a curative vision of health to a system that decompartmentalises the “city”, hospital and medico-social sectors to organise the response to the health needs of patients, whether ill or healthy. The result is a profound transformation of the medical landscape.

In 2018,

910

healthcare centres in France[1]

Primary healthcare centres for a coordinated local response to citizens’ health issues

Private practice medicine is evolving with the growth of primary healthcare centres, including multi-professional healthcare centres (MPHCs).

These groups of health professionals (medical professions, medical auxiliaries, pharmacists) and other professions (psychologists, nutritionists, etc.) provide healthcare activities and participate in public health, prevention and health education operations through a shared health project and real collaboration between care providers.

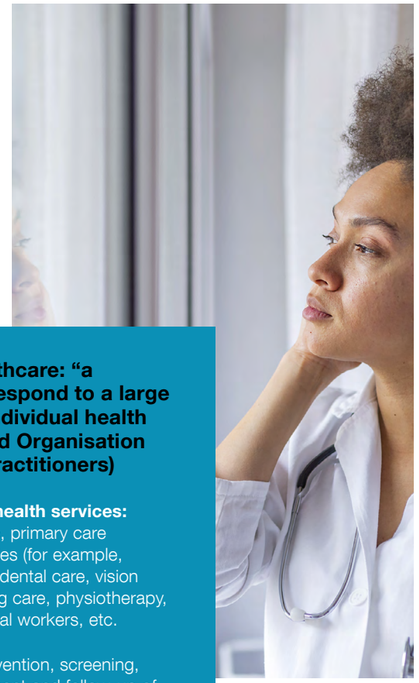
MPHCs have multiplied in recent years and this trend is set to continue, with the support of the public authorities, who see a solution to medical deserts, to the need to coordinate care pathways and to the aspirations of professionals for shared modes of practice.

These local structures contribute to strengthening the medical fabric in regions where the offer is fragile (for example, urban policy priority neighbourhoods) and make it possible to reach patients as close as possible to where they live. They provide a coordinated and monitored response over time to citizens’ health issues: checking that a pathology is not getting worse, ensuring that a treatment is appropriate, treating a wound, accompanying changes of habits that are conducive to health, etc.

Primary healthcare: “a capacity to respond to a large majority of individual health needs” (World Organisation of General Practitioners)

- **All front-line health services:** general medicine, primary care medical specialities (for example, city paediatrics), dental care, vision disorders, nursing care, physiotherapy, medical and social workers, etc.
- **Missions:** prevention, screening, diagnosis, treatment and follow-up of patients, dispensing and administration of medicines, pharmaceutical advice, guidance in the healthcare system and the medico-social sector and health education.

[1] Source: Key healthcare provision figures, Direction Générale de l’Offre de Soins (DGOS - General Healthcare Provision Division), 2018





Primary healthcare by our European neighbours

- **This shift has been taking place for several years in Catalonia, Finland and Sweden,** where the health system is organised around primary healthcare regulated by the State 2. In Catalonia, each primary health area, with a population of between 5,000 and 25,000 people, has at least one primary healthcare centre, which is the point of entry for patients and the basis of the health system[3].
- **These primary healthcare centres are intended to play a pivotal and coordinating role,** by forging links with hospital, medico-social and social establishments.

Hospital specialisation and development of outpatient care

In this new organisation of the health system, hospitals are refocusing on their healthcare missions, with impacts on their organisation and operation.

The two major changes concern the grouping of healthcare facilities with the concentration of specialities within clusters, and the development of outpatient care, which marks the transition of the hospital from a place of stay to a place of transition. The shift to outpatient care was initiated by the development of outpatient surgery, which has seen significant growth in recent years, with the outpatient rate during the day, without overnight stay rising from 38% in 2008 to 54.1% in 2016[4]. This development will continue in certain medical and psychiatric activities. According to sociologist Pierre-André Juven, this change has its limits: *“although outpatient care has many advantages, in particular not keeping patients overnight, it also has the disadvantage of becoming a standard that is not suitable for certain populations in particular elderly or isolated persons”*[5].

Public hospitals: the way out of the crisis

These transformations, which are also part of an economic rationalisation drive, are reconfiguring the hospital landscape, leading, in particular, to the closure of hospitals and hospital beds.

The DREES (*Direction de la Recherche, des Etudes, de l’Evaluation et des Statistiques* or Directorate for Research, Studies, Evaluation and Statistics of the Ministry of Solidarity and Health) reports that 17,500 full hospitalisation beds (with overnight stay) have been closed in 6 years (between 2013 and 2018)[6]. According to the body, this reduction is offset by the creation of 5,300 “day” beds (enabling greater patient turnover) and by the development of outpatient and home care. However, these overall figures mask disparities between the various types of establishments (public hospitals, private non-profit establishments, private for-profit clinics): while public hospitals account for 78% of the total number of full hospitalisation beds removed, the creation of “day” beds is mainly driven by for-profit clinics.

The inadequacy of the premises and the transfer on emergencies as the medical deserts develop partly explain the strong tensions that currently affect the public hospital.

Saturation of the emergency services, worsening working conditions (overload, feeling that the quality of healthcare is deteriorating) and inadequate remuneration are denounced by care providers. The attractiveness of public hospitals is deteriorating, leading to recruitment difficulties for the majority of establishments and closures of departments. In January 2020, nearly 30% of doctors’ positions were vacant in hospitals, according to figures from the French Hospital Federation (which represents public hospitals).

The preferred response today is organisational. It is based on the vision of hospitals dedicated to technical and hyper-specialised healthcare, deferring those treatments that would not fall within the scope of public hospitalisation to city medicine and clinics. This transformation can only work if it goes hand in hand with an increase in the resources allocated to public hospitals and if the transfer of certain missions to the city is properly financed and organised.

[2] Source: Soins de santé primaires (Primary healthcare). Les pratiques professionnelles en France et à l’étranger (Professional practices in France and abroad), Thematic Bibliography, IRDES, 2018
[3] Source: Organisation des soins primaires en Catalogne (Organisation of primary healthcare in Catalonia), Toni Dedeu, Revue française des affaires sociales (French review of social affairs), 2010
[4] Source: Etat des lieux des pratiques de chirurgie ambulatoire en 2016 (Situational analysis of outpatient surgery practices in 2016), DREES, 2019
[5] Source: Pierre-André Juven, Frédéric Pierru, Fanny Vincent, La casse du siècle. A propos des réformes de l’hôpital public (The hold-up of the century.Reforms of public hospitals), Raisons d’agir, 2019
[6] Source: Etudes et Résultats no. 1130, DREES, 2019

A regional organisation of the healthcare offer to benefit a gradation of patient management

The transformation of the medical landscape is accompanied by a new regional organisation of the healthcare offer, which is designed to be fluid and coordinated between cities and hospitals and across all sectors: health, medico-social and social. It is based on three pillars: Regional Health Projects (RHPs), Regional Health Professional Communities (RHPCs) and the status of local hospitals.

The first two aim to develop a health project shared between all players (local authorities, health establishments, medico-social establishments, primary care players, users, education players, etc.) and the organisation of the day-to-day activities of health professionals around shared objectives.

As for the status of local hospitals, it reflects the intention to move towards a gradation of patient care management. These establishments are focused on primary care and their missions are refocused on the activities of multi-purpose medicine, healthcare for the elderly, follow-up and rehabilitation care, monitoring of chronic illnesses and advanced medical and surgical speciality consultations (with the support of other establishments). Therefore, surgery and maternity departments are closed, reserved for *Groupements Hospitaliers de Territoires* (GHTs or Regional Hospital Groups). This is development that worries certain mayors, who decry the metropolisation of health.





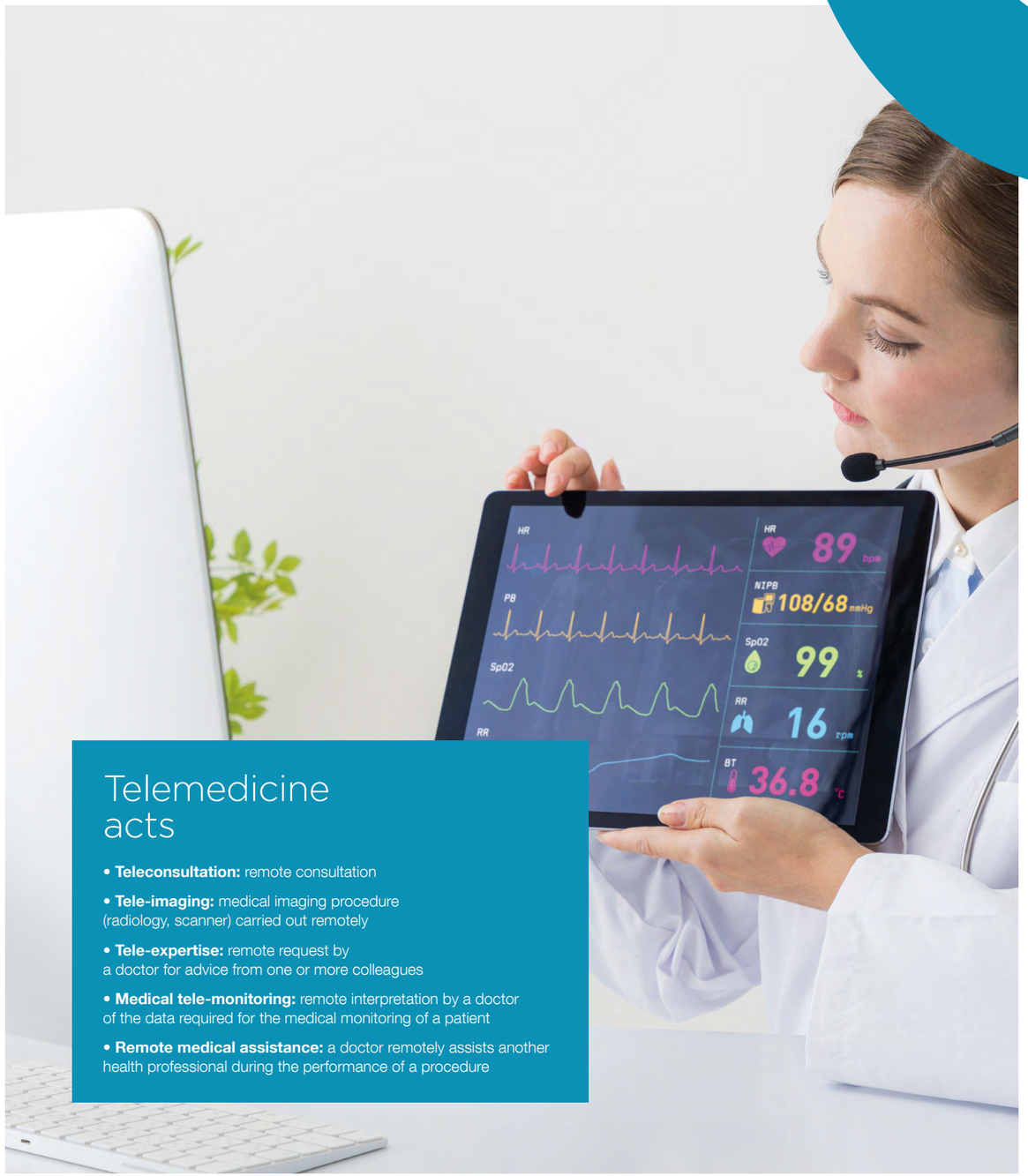
Digital health tools to support the transformation of the sector and the development of practices

In parallel with the reconfiguration of the medical landscape, practices are changing through medical but also technological advances.

Numerous digital tools now exist for the remote implementation of activities, services and systems applied to the health, medico-social and social fields. **E-health,** since this is what is concerned, appears to be a lever for decompartmentalising sectors and developing prevention and primary healthcare. It applies to **health information systems,** by organising the exchange of information between city medicine and hospitals, or between departments within the same hospital. Shared medical records (SMRs), for example, are based on this system; SMRs are digital health records that enable health professionals to access a patient's health data to improve medical monitoring. E-health is also used in **telemedicine,** through the remote exercise of certain medical practices.

If e-health is to really take off, solutions will have to be found to the various issues it raises: confidentiality of personal data, social acceptability, management of the deployment of technical solutions to cover the entire population, switchover of current health services to digital technology, training, patient autonomy (when e-health solutions allow them to stay at home for their treatment), etc.

E-health appears to be a lever for decompartmentalising sectors and developing prevention



Telemedicine acts

- **Teleconsultation:** remote consultation
- **Tele-imaging:** medical imaging procedure (radiology, scanner) carried out remotely
- **Tele-expertise:** remote request by a doctor for advice from one or more colleagues
- **Medical tele-monitoring:** remote interpretation by a doctor of the data required for the medical monitoring of a patient
- **Remote medical assistance:** a doctor remotely assists another health professional during the performance of a procedure

03. Proposals for designing cities and neighbourhoods that are conducive to health



Health inequalities concern all countries to varying degrees.

In France, they are marked by a social gradient in life expectancy: the life expectancy of the richest 5% of the population is more or less thirteen years greater than that of the poorest 5% (INSEE, 2018). These inequalities are above all social, but they are also regional and concern all levels.

Beyond the accessibility and quality of healthcare, reducing health inequalities requires action to be taken on all the factors that determine the state of health of populations, by promoting an exposome approach. These factors include all the harmful environmental, behavioural and occupational exposures an individual has had throughout his or her life. Regions and the local level, in particular cities, are gateways for operating this change of model.
The following pages detail four proposals to guide the design of regions, cities and neighbourhoods that are conducive to health:

- **A supportive and welcoming** living environment that facilitates the inclusion of people made vulnerable by illness, disability or loss of autonomy
- **Regional organisations** that act on all health determinants
- **A network of places and services** based on new medical practices to enable care to be provided as close to populations as possible.
- **Buildings that respect people**

Designing a supportive and welcoming living environment that facilitates the inclusion of people made vulnerable by illness, disability or loss of autonomy

In February 2005, France passed legislation making it mandatory for cities to create a living environment adapted to residents with disabilities, by making urban areas accessible to everyone within 10 years. However, the additional time granted and the leniency shown due to the difficulties faced by cities in meeting the established deadlines have considerably diminished the initial goal.

How is a welcoming city for people with disabilities designed? Fifteen years later, the goal remains the same, but the approaches have evolved. Methods focused solely on the technical compliance of buildings, public spaces and public transport are no longer the trend. The framework of the players is now that of an inclusive city: working to make urban spaces and services accessible to all, with no restrictions.

The goal is to meet all of the population's requirements and desires and to give them a central role in governance processes, regardless of any constraints they may have or of their physical or cognitive abilities. In other words, the objective is to remove all urban and social obstacles which could prevent some citizens from participating in the life of the community.

This is a major challenge, as people with disabilities are affected by various forms of exclusion. In 2015, according to the Human Rights Defender, disability was the second highest cause of employment discrimination. A city's structure and organisation is likely to amplify some of the constraints and reduced capacities of people with disabilities.

Enabling all citizens to participate in community life



Limits to universal accessibility

For a long time, the response took the form of equipment or developments designed to eliminate disabling conditions, according to a principle of universality or of "making everything accessible".

However, this approach has shown its limitations, as can be seen in housing regulations. Accessibility standards (hallway and door width adjustments enabling people in wheelchairs to move freely and use the entire space of a home independently) require an estimated 5 square meters of space per apartment[1]: while commendable, the original intention of adapting to everyone has proven to be inadequate for some users. Furthermore, these standards themselves do not guarantee accessibility for everyone and must often go hand-in-hand with developments to adapt homes to the specific requirements of their users (colour codes for people with visual impairments, bells for people with hearing impairments, walk-in showers and grab bars for people with reduced mobility, etc.). In this context, in 2018, the ELAN law confirmed the mandatory accessibility of 20% of new housing units for people with disabilities rather than 100%, while it must be possible to easily transform the remaining 80% through works, at a low cost. This legislative development was criticised by some organisations who defend the rights of people with disabilities, but encourages us to rethink our approaches.

[1] Source: Le grand flou des logements "accessibles" aux handicapés (The great uncertainty of "accessible" housing for people with disabilities), Anne-Aël Durand, Le Monde, June 2018



In 2018, the ELAN law confirmed the mandatory accessibility of

20%

of new housing units for people with disabilities rather than **100% while the remaining 80%** must be transformable

In France, an estimated
2.75
million
adults present functional limitations, including
1.86
million
with mobility problems

Multiple disabilities

It is not uncommon to think of the word "disability" as a one-size-fits-all term, forgetting that in fact, it covers a wide range of realities and situations.

In daily life in cities, the various types of disability can result in difficulties in getting around in an unfamiliar environment, communicating, reading or climbing stairs. In France, an estimated 2.75 million adults present functional limitations, including 1.86 million with mobility problems[1]. This data includes neither children (over 350,000 students with disabilities were reported in a survey by the National Ministry of Education), nor people who will be faced with a loss of autonomy, in particular senior citizens, whose numbers are going to rise.



The different types of disability

Hearing: from minor hearing problems to complete deafness

Visual: from visual impairment to complete blindness

Mental: consequence of an intellectual disability

Psychological: psychological disorders such as schizophrenia, depressive disorders, etc., which can be cured by means of appropriate therapy

Cognitive: consequence of dysfunctions in cognitive functions, such as attention and memory problems, etc.

Motor disabilities

Agile, service-oriented solutions able to adapt to various requirements and contexts

For all these people, cities are sometimes synonymous with constraints and exclusion, when in actual fact they should, on the contrary, become sources of opportunities, in particular through their service-oriented capacity.

And if *"accessibility was a service rather than an array of equipment",* as Brice Dury considers it in his report for the Outlook and Public Dialogue Division of Greater Lyon[2], it would combine human assistance, equipment and digital tools to provide the right solution at the right time, through intelligent design that combines the "for everyone" and tailor-made aspects. For example, when going grocery shopping, a person with a disability could have access to a movable ramp system at the entrance to the building, an in-store pick-up service to pre-order groceries, an application informing him or her of the products available in store, human assistance (to read labels, get around the store, etc.) and a volunteer-based home delivery service.



Inclusive solutions to benefit everyone

As far as possible, these solutions should benefit as many people as possible, in order to avoid further separation of people with disabilities from the rest of society.

The Wegoto application enables users to search for the most well-suited itinerary with no obstacles based on the user's profile (cyclists, persons with reduced mobility, persons with a visual or hearing impairment, etc.), making it a universal, non-discriminatory and non-stigmatising tool that promotes sustainable transport.



[1] Source: Enquête Handicap-Santé (Health and Disability Survey), DREES and Insee, 2008-2009
[1] Source: Ville et handicap: en finir avec "l'accessibilité" (Cities and disability: an end to "accessibility"), 2011



Changing perspective: designing a city by putting oneself in the shoes of all its users

To move towards this ideal, players are using new methods to think outside the box with regard to the urban fabric.

Among these methods is "inclusive design", which entails learning from various disabilities or constraints, in order to improve the interface of a service, piece of equipment or development and including a maximum number of users. There is no shortage of experiments, as evidenced by an initiative in the city of Basel in Switzerland, beautifully named "Les Yeux à 1.20 m" ("Eyes 1.20 m from the ground"). Its goal? To encourage the players involved in the development to take children into account when designing public spaces. Through a "Kinderbüro" (children's office), children co-design development projects (redevelopment of a street, design of a new school, etc.) and are involved in the democratic process. The results are summarised in a guide which takes the form of a measuring stick perforated at a height of 1.20 m, in order to view the space from the physical position of a child. A similar principle could be applied to other profiles, in order to identify their usage challenges. The urban rhythm could be questioned, for example, by taking into account the acceleration of our pace of life compared with the slower movements and flows of people who have difficulty getting around.

Giving people with disabilities the capacity to act, design and decide

These approaches have the additional advantage of placing users in a legitimate role that is all too often forgotten: that of experts in their own everyday lives.

They know better than anyone what constraints, requirements or potential conflicts of use they face. The various players must support these users, in order to jointly express and design the most appropriate responses. This is the aim of an experiment by the InControl association in the United Kingdom regarding allocations for senior citizens and people with disabilities. The association partnered with the authorities to create a service enabling beneficiaries to decide on the use of their allocations themselves, by choosing the services to which they would like to subscribe. The services chosen were quite different from those provided in the conventional offer and focused heavily on leisure activities that promote "well-being". This was a successful example of empowerment.

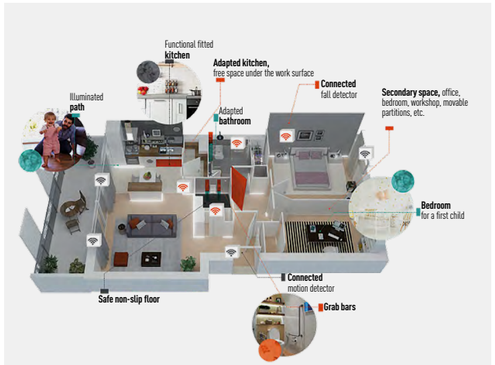


Bouygues Construction Reference

“Wizom For Life”, evolving housing that supports residents throughout their lives

This housing is transforming to meet the expectations of its occupants of all ages and in all life situations, through flexible architecture and an evolving construction technique. Designed by occupational therapists, its design serves the requirements of occupants for real quality of use. Equipment can be easily installed, moved or removed to support changes in life or occupants. Services and activities led by our partners Unis-Cité and Hakisa help put residents in touch with each other (for example, a common room within a residence).

In the Résidences Vertes project in Pulnoy (54), 65 private and social housing units are equipped with Pharmagest’s Carelib solution, which uses new technologies and connected objects to make life at home easier for vulnerable senior citizens and their caregivers.



“Thanks to the involvement of local players and also experts such as Bouygues Construction, our ISIT students, who are not specialists in the issue of disability, managed to come up with ideas that go well beyond the confines of the home in just a few days, while at the same time remaining rooted in the everyday reality of users’ lives. And they really enjoyed learning while feeling useful!”

Marion Bedat
Academic Director in charge of the Inter-Cultural Management specialisation

Bouygues Construction Reference

“Handicap dans la ville” (“Disability in the City”), a Bouygues Construction/ISIT (University of Inter-cultural Management and Communication) hackathon to facilitate the daily life of people with disabilities

In 2018, Bouygues Construction’s Human well-being department and the ISIT joined forces to organise the “Disability in the City” hackathon. The goal was to encourage students to get to grips with the diversity of types of disability and the specific needs of the affected populations with respect to how they use the city on a daily basis. They also had to propose innovative solutions through their ability to understand differences, which is directly linked to their multilingual and inter-cultural expertise. For one week, teams of Master’s level students thought up, designed and prototyped around ten solutions: a geolocation-based application to connect French Sign Language speakers (deaf, hearing or hard of hearing people) so that they can help each other in everyday situations, a touring bus for the early diagnosis of children with “dys” disorders (specific learning disorders such as dyslexia), etc.



Inspiration



Third Place

Humanlab
(Rennes)

Created by the My Human Kit association, the Humanlab opened its doors in Rennes in 2017.

This digital manufacturing pilot workshop (fablab) is dedicated to health. In addition to the development of projects such as replicable electric wheelchairs, the aim is to enable people with disabilities to “self-repair”. This was the goal of the project initiator, Nicolas Huchet, who had his forearm amputated in 2002 following an accident at work and who could not afford a suitable prosthesis. Nicolas designed an inexpensive prototype bionic hand that meets his needs in collaboration with a sculptor and a fablab in Rennes. Humanlab encourages collaboration between able-bodied people and people with disabilities and promotes the development of open source solutions to help as many people as possible.



Specialised Home for People With Disabilities

School of Independent Living
(Vandoeuvre-lès-Nancy)

The Ecole de la Vie Autonome (EVA) was opened in 2012 by the Office d’Hygiène Sociale de Meurthe-et-Moselle, an association that manages several establishments for people with disabilities.

The EVA provides a form of reception and accommodation that prepares people with sometimes severe motor disabilities for autonomous living. At the end of a programme that can last several years, these people, who were initially living with their parents or in an care facility, will be able to live independently in their own home in the city of their choice. They begin by staying in a studio apartment within the EVA, which is adapted to their disability, alongside a team of professionals who support them as they learn how to carry out everyday actions and obligations (eating, hygiene, shopping, administrative tasks, etc.) and compensate for their motor deficiencies. They then live in an EVA apartment located in the city, where they prepare for independent living while benefiting from regular monitoring. This approach enables them to overcome any difficulties or apprehensions on their journey to independence at their own pace.



City networks

Age-Friendly Cities

Created in 2005 during the World Congress of Gerontology and Geriatrics in Rio de Janeiro and supported by the World Health Organisation, the aim of the French-speaking *Villes Amies des Aînés* programme is to create a network of cities committed to improving the well-being of older residents in their region.

The approach is participatory and is based on the experience and personal history of residents. Cities joining the programme ask residents about their needs and expectations before drawing up an action plan. The Belgian, Swiss and French cities that are members of the network exchange regularly to share their best practices. One example is the “À petits pas dans mon quartier” initiative set up by a senior independence residential home in the 8th arrondissement of Lyon: a neighbourhood plan drawn up by residents and a psychomotor therapist that uses a scale... expressed as a number of steps! This initiative restores residents’ confidence in themselves and promotes their independence, by making them aware of the actual distances between the residence and local services.



Search

dEMAND project
(Quebec, Vancouver)

dEMAND is a participatory research project whose aim is to better understand the realities of the mobility and social participation of Canadians using mobility aids (canes, crutches, wheelchairs, etc.):

Participants are users of technical mobility aids. They are equipped with tools enabling them to identify their activities and the location of the places they go to using a GPS. They can take photos of the obstacles or facilitators they encounter, comment on them using PhotoVoix technique and assess the corresponding environment. This information is decrypted and analysed by researchers, in order to better understand the issues encountered and to come up with solutions to address them.

Organising regions in a way that has a favourable impact on all the determinants of populations' health

"Health as a compass for regional development"

Health is a lever for transforming our lifestyles.

Our eating habits are changing, and through these, our agricultural production methods; our mobility practices are shifting, and through these, the role of the car in cities.
For Sandra Moatti, Director of the *Institut des Hautes Etudes d'Aménagement des Territoires* (IHEDATE), *"the local level seems the most appropriate for promoting a cross-cutting approach to health, as promoted by the WHO: food projects, active mobility and sporting activities, air and water quality, mitigation of noise and heat, adaptation to disabilities"*[1].

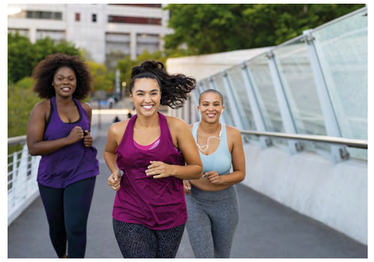
Healthcare issues are therefore included in regional planning, through various regional plans, strategic planning documents and urban planning documents, either implicitly or more overtly. During the review of its local urbanisation plan, the City of Rennes made health a core value of its 2030 urban project. In the same vein, the Rennes Métropole inter-municipal local urbanisation plan includes a strategic focus, namely "Building a metropolis of well-being to serve its residents, incorporating health and risk management...".

IHEDATE

IHEDATE, a partner of Bouygues Construction, chose to look at regions from a health and well-being perspective in the 2018 cycle. The 2018 "Regions, health and well-being" annual report, which is available on the IHEDATE website, describes the work carried out in the 2018 cycle.







An increase in the number of environmental health approaches and tools

Tools and approaches are being developed at various levels to support the consideration of health in regional policies and projects.

These include regional Health and Environment Plans, Local health diagnoses to analyse the health and social situation of a geographical area, Local health contracts to reduce regional and social inequalities in health, etc.

In particular, two development project tools exist as a decision-making aid. The Health Impact Assessment (HIA) identifies both the favourable and unfavourable population health effects of projects or policies and proposes ways to maximize positive impacts while mitigating negative repercussions. An HIA implemented as part of a new national urban renewal project in the Maurepas neighbourhood in Rennes, for example, resulted in operational recommendations, such as extending the surface area of school playgrounds within schools to encourage physical activity among students and installing courtyard-side rather than road-side vents in housing units for a healthier environment.

In 1987, the WHO launched the Healthy Cities movement, an international programme aimed at implementing the health for all strategy and adapted at a local level through a network of Healthy Cities. This movement marked the birth of the Healthy Urban Planning (HUP) concept, developed in 2000 in the work of Barton and Tsourou[2]. In 2014, in France, the Ministry of Health and the EHESP (*École des Hautes Etudes en Santé Publique* or French School of Public Health) published the "Agir pour un urbanisme favorable à la santé" ("Action for Healthy Urban Planning") guide, a tool used to question every aspect of urban organisation capable of interacting with populations, their environments and lifestyle habits and thus determining their health status. The ISadOrA project (please see the interview on pages 46-47) provides an operational adaptation of this tool, which aims to include issues relating to the health and well-being of populations throughout the definition and implementation of development projects.

[1] Source: Territoires, santé, bien-être (Regions, health and well-being), Ihedate, SciencesPo, École des Ponts Paris Tech, 2018
[2] Source: H. Baron, C. Tsourou, 2000, Healthy Urban Planning in practice, WHO Europe

Eight strategies for healthy urban planning

Reduce emissions and exposure to pollutants and harmful factors

Promote healthy lifestyles, including physical activity and healthy eating

Contribute to the development of the social environment to promote social cohesion and the well-being of residents

Enable access to healthcare and social services

Identify and manage conflicts between various policies (environmental, development, health, etc.)

Set up strategies that promote intersectorality (particularly between urban planning and healthcare professionals) and the involvement of all stakeholders, including citizens

Design an adaptable project and take developments in lifestyles into account

1987

The WHO launches the **Healthy Cities movement**





Clément Deloly
"Urban Planning and Health" research officer, **École des Hautes Études en Santé Publique (French School of Public Health)**

ISadOrA Project
Incorporating Health into Development Operations

Health determinants

Environments:
air, soil and water quality, biodiversity

Living environment: electromagnetic fields, environmental noise, light, temperature, safety

Socio-economic environment: social interactions, access to employment, services and facilities

Lifestyle and individual capabilities:
physical activity, diet, individual skills, income.

The goal of the ISadOrA project is to provide operational guidance for the incorporation of health into development operations. How did the project begin?

Since the emergence of the concept of healthy urban planning in the 1990s, thinking on public health issues in urban environments has grown and the methodological framework has been structured. Born of the desire to capitalise on this work, the goal of the ISadOrA project is to widely disseminate knowledge and practices in the world of operational development, in order to promote the dissemination and massive appropriation of these principles by all players and thus make practices evolve towards Operational Healthy Urban Planning (OHUP).



The steering of the project, led by an interdisciplinary team committed to Healthy Urban Planning driven by the EHESP, the a'urba (Bordeaux Aquitaine urban planning agency) and the FNAU (National Federation of Urban Planning Agencies), and its trilateral funding by the Ministry of Solidarity and Health, the Ministry for Ecological and Inclusive Transition and ADEME (Agency for the Environment and Energy Management), attest to the desire to create synergies between sectors that are sometimes compartmentalised.

For more than two years, the project mobilised an interdisciplinary working group bringing together elected representatives, developers, planners, local government officials and several partners (observatories, resource centres, regional health agencies, etc.).

Federating players from all backgrounds and devising a method of synthesis that promote operational buy-in are key issues for the success of this type of project. What were the methodological choices?

In addition to the development of a culture common to all participants, a first exploratory phase was organised around a summary of scientific knowledge in the field and the preparation of various theoretical frameworks. Questions such as, "What are the links and mechanisms between development choices, health determinants and health?" and "How are the links between health and development taken into account at the different stages of a project?" were asked.

Health determinants were analysed from the perspective of various components of a development operation: functional diversity, public spaces, housing and green and blue islands and spaces.

In parallel, the theoretical framework of a development operation was dissected, in order to identify the time frames, governance and procedures for stakeholder involvement (community services, future managers, populations, etc.) linked to each stage (decision to go ahead, initiation, design, assembly, implementation, closure and management).

This phase resulted in the identification of 15 keys, which constitute the core of the operational tool. How are they applied and which best practices do they promote?

The operational keys of the ISadOrA guide correspond to the major goals to be achieved, in order to ensure that development operations are conducive to health. These major goals are divided into two categories:

1. Process keys address how to successfully carry out a development operation to ensure that health issues are properly incorporated. They deal with the governance of the operation, the elaboration of a portrait of the health status and the environment concerned by the operation, and finally the implementation of participatory approaches enabling residents to exercise greater control over their environment and its impact on their health.

2. Design keys deal with the programming and design choices to be made concerning the configuration of islands, public spaces and green spaces, in order to ensure that they are conducive to health. By incorporating several health determinants, they each deal with a particular theme (exposure of populations to pollutants and harmful factors, social cohesion, public spaces, urban agriculture, urban heat islands, rainwater management, etc.).

Each of these keys gives rise to a support sheet that explains the "health" goals targeted by the key and lists best development practices and operational recommendations for their implementation.

For example, with respect to active mobility, this may involve making facilities, offices, shops and public transit more accessible through specific developments such as bicycle parking. In terms of islands, it could involve limiting car access, providing pedestrian paths between islands or designing a shared silo car park on the outskirts of a neighbourhood. Operational recommendations group approaches and principles to promote the emergence of these types of practices. Identifying from the start sources of potentially harmful factors, taking pedestrians into account, expanding infrastructure (ex. bike paths) with visual reference points, is key. All of these action levers feed into a guide intended for all stakeholders involved in the development of a project.

What advice would you give to urban production players to help them take ownership of this guide and apply it to their projects?

First of all, players managing this type of approach must acculturate themselves in Healthy Urban Planning and the associated principles (comprehensive, positive and dynamic approach to health, approach by health determinants, integrated approach to public health and environmental issues, links between development and health, etc.). For this, it is possible to turn to the increasingly abundant literature on the subject[1], or to continuing education training courses (for example, the "Diplôme d'Etablissement SPAT" ("Diploma in Public Health and Regional Development"). Sharing a common culture around these principles and advocating for the implementation of Healthy Urban Planning must unite as many governing players as possible around development operations (elected representatives, developers, urban project managers, operators, public healthcare professionals, etc.).

The implementation of the three process keys is essential, to ensure that the approach works properly. In particular, the setting up of a "health authority", made up of development and public health players and incorporated into the governance of the operation, guarantees the implementation of the approach. To do this, development players must take a step sideways to get closer to public health players (those of a community or an RHA, for example), in order to ensure that the choices made in the operation are more concerned with the public health issues of a region.

This guide provides a framework for the incorporation of public health and environmental issues into the process of elaborating a development operation. However, this framework must be reworked by the players involved in the operation according to its context. The best development practices and operational recommendations laid out in each of the sheets must provide the stakeholders involved in the operation with information on the ways to proceed and the choices to be made, but these players must also take ownership of them.

The 15 operational keys

PROCESS KEYS

- Health governance
- Health/Environment Portrait
- Participatory approaches

DESIGN KEYS

- Exposure of populations to pollutants and harmful factors
- Quality of housing
- Accessibility to employment, services and facilities
- Active mobility and persons with reduced mobility
- Social cohesion
- Social function of interface spaces
- Five senses and identity of places
- Public spaces
- Green spaces
- Urban farming
- Urban heat islands
- Rainwater management



[1] Source: The following is a non-exhaustive list of structures to be consulted concerning Healthy Urban Planning:
- Collectif FNAU, Santé et Territoires (FNAU Collective, Health and Regions), Paris Gallimard Alternatives, Points FNAU, 1st semester 2020
- IAU, ORS IdF, Territoires, incubateurs de santé? (Development and Urban Planning Institute, Ile-de-France Regional Health Observatory, Regions - health incubators?), Les Cahiers, no. 170-171, September 2014
- A. Roué Le Gall & MF. Thomas (2018). Healthy urban planning: from theory to practice. "Prendre soin des urbains" ("Taking care of urban dwellers"), Urbanisme magazine, October 2018, no. 410: 36-39.
- "Agir pour un Urbanisme Favorable à la Santé, concept & outil" ("Acting for Urban Planning Conducive to Health, concept & tool"); EHESP/DGS Guide, Anne Roué-Le Gall, Judith Le Gall, Jean-Luc Potelon and Ysaline Cuzin, 2014 ISBN: 978-2-9549609-0-6

Mobilising all available levers of action for a regional fabric that is conducive to health

The methods and practices of urban production include many human uses and behaviours to act on health determinants, with a view to designing living spaces that are conducive to the health of populations:

Regional planning

By controlling regional development and providing a framework for development projects, through planning documents and the legislative and regulatory texts implemented by local authorities.

In 2018, London City Council took the decision to ban fast-food outlets within 400 metres of schools, in order to provide a healthier food landscape for pupils when they exit schools. This cordon sanitaire aimed at combating obesity, which affects 40% of children leaving primary school in the United Kingdom.

Urban development

Through the process of collectively defining development choices that will give substance to projects and design the urban form, through the organisation of buildings, the layout of the road network, the general organisation of public spaces, the design of islands and choices in terms of density.

In a metropolitan guide to public spaces and roads, the Metropolis of Grenoble has defined several principles to be respected by all those involved in the development of spaces and roads in the metropolitan area, notably in order to encourage active mobility, pleasant stays and the diversity of uses and users in public spaces, shaded areas and green open spaces.

Urban programming

By translating project choices in terms of development, housing, activities, public facilities and services into programme elements and thus defining restoration goals for the urban space.

Programming can contribute to simplifying the daily life of users and to preserving their health and well-being by incorporating developments that encourage the adoption of active mobility, sports trails, a healthy local food supply, health and well-being third places, etc.

Urban programming can help simplify the daily lives of users and preserve their health

Design

High quality design choices are made to provide inclusive sporting facilities that are suitable for children, senior citizens, sedentary people, people with disabilities, and athletes. The same is done for artistic street furniture and continuous bike paths, conducive to relaxation and movement.

The issue of cohabitation between modes of transport is often a contentious one. In order to open up public space to active modes as much as possible, the City of Stockholm has devised two scenarios, “slow” and “fast”, to support cycling and interaction with pedestrians: pavements are opened up to “slow” cycle traffic by means of road markings, and dedicated right-of-way reserved areas are set up in a structured network for “fast” cycle traffic.

A model of “communal life”, the Superliken park in the NØrrebro neighbourhood of Copenhagen is based on the idea of sharing public space by and for residents. Its originality is based on a three-fold development and the cohabitation of urban furniture from a multitude of countries (some of which were brought by residents themselves), symbolising the cosmopolitan character of the neighbourhood. Stretching over a length of 750 metres, the park is divided into three themed areas, each with its own visual identity: a square devoted to sport and play, predominantly red in colour and with a rubber-covered floor; an area designed as an “urban living room”, encouraging people to meet up and play, with a predominantly black concrete floor marked by wavy white lines; a green, undulating park devoted to outdoor activities.

Designing urban spaces from the perspective of human users to allow for connection and recreation



Urban production mobilises a wide range of players and expertise. Recent years have been particularly marked by the development of behavioural sciences (neuro-sciences, social psychology, etc.) that study the mechanisms governing our individual attitudes and behaviour and decision-making processes.

The economic approach to behaviour has notably theorised the nudge, presented by its instigators Cass Sunstein and Richard Thaler as a “soft method to inspire good decision-making”. This “nudge” consists in making a slight modification to the context or the “architecture of choice”, in order to influence behaviour in interest of individuals or the collective.

All over the world, nudged practices are taking over urban space: poems on public benches to encourage conversation and lounging, public fountains delivering fresh or sparkling water to promote water to quench one’s thirst, staircases that are painted or decorated with encouraging messages to encourage people to leave lifts or escalators, etc. There are many examples to promote healthy actions. However, this approach can only have a real impact on user practices under certain conditions.



One of the fundamental qualities of the nudge is its discretion

Behavioural changes should be suggested without stigmatisation or coercion in order to respect people’s free will. Indeed, the technique can be counter-productive for some individuals, who find it disparaging to feel influenced and pressured to act in a certain way. This is why the implementation of nudges must be subject to usage tests, in order to verify their relevance and effectiveness and to test whether they have the expected impact on behaviour.



Behaviour depends on individual choices but is also determined by social representations

The work of the Credoc, the Credes and the SESI carried out in the 2000s on the assessment of the Evin law thus showed that measures concerning alcohol had attracted a low level of adherence, due, in particular, to the social representations related to alcohol, whose consumption is perceived as convivial. Measures aimed at changing people’s behaviour to make it more virtuous have no effect if they do not act on what profoundly determines it.



Incentives to change behaviour will only have a real impact if they are accompanied by awareness-raising activities

Explaining the bases of desirable behaviour (for example, what is the advantage of using stairs rather than escalators or lifts).



The scope of the message and the result will be reinforced by combining nudges with other types of actions (choice of developments, urban configurations, etc.).

In Nantes, for example, the Voyage à Nantes proposes a tour to get to know the city, through a stroll including artistic works or highlighting regional structuring elements, materialised by a coloured line on the ground that encourages people to walk around.



Xavier Brisbois
Doctor
Social psychology

Taking the social and cognitive functioning of individuals into account, in order to design contexts that are conducive to healthy behaviours

What contribution can behavioural psychology make when dealing with the urban fabric and its uses?

In terms of the urban fabric, psychology, through the study of behaviour, can help to design the optimal context in which desirable behaviours, especially healthy behaviours, can take place.

It particularly takes into account the functioning of cognitive and social processes, in other words, the way in which individuals construct their perception of their environment, via the processing of information received from the environment and their interactions with other individuals, which will construct the meaning of possible actions and the feeling of being able to implement certain behaviours or not. The basic idea is to understand that it is the context that is the essential determinant of behaviour, much more than the values, wishes or other ideas of individuals.

Take the example of an environment whose design structures flows in a way that tacitly prohibits prolonged stays. Imagine that the dominant social representations associated with mobility in this environment are speed of movement and optimisation of distance-time. To minimise the risk of conflicting social interactions, individuals who do not fit into this pattern (for example, those who walk slowly) will have to comply with a norm that generates stress or will develop a sense of being pushed away from public spaces and adopt avoidance behaviours by staying at home or looking for other areas to go to.

What can the concrete applications for designing healthy living spaces be?

The key question is that of the attractiveness of spaces, beyond their mere utility or functionality. Aesthetic, lively spaces must be designed, where events take place, and which make people want to stay and spend time there. Encouraging walking, for example, involves identifying places to go on foot, making paths conducive to walking and also making them pleasant to stroll around.

Meaning can be created by staging certain behaviours (editor's note: this is what the Superliken Park in Copenhagen provides, please see page 48).

It is also a question of supply. The presence of shared gardens in a neighbourhood, for example, affects representations related to diet as much as it does practices, by conveying values such as local supply, sharing and healthy food. This calls into question the relationship of residents with respect to their diet and can change perceived orders with regard to their consumption habits.

In order to make cities spaces of freedom and fulfilment, let us keep in mind that spaces that are more conducive to visibility restrict behaviour. The example of the metro is particularly telling. In Paris, this is a place where speech is controlled due to proximity with other passengers. The feeling of being listened to encourages self-censorship. This type of configuration can be reworked by designing a more private environment, in which sound does not carry so far (music, reverberant coverings, etc.).

Finally, representations associated with spaces or practices must be studied, in order to anticipate the uses that will take place in them and which are not always those we expect or hope for. During work on cleanliness, we were able to observe that tree roots in earth or grass generate more negative interactions (cigarette butts, dog excrement) related in a certain way to the idea that nature will manage to eliminate these on its own. This implies the implementation of awareness-raising programmes to support the appropriation of new types of spaces.

Engaging citizens and enabling them to play an active role in their own health by co-designing and running positive health living spaces with them

The implementation of the concept of Healthy Urban Planning requires significant collaboration between various sectors and players and overcoming institutional and professional frameworks in favour of participatory approaches with residents.



Participating in the life of the city is a fundamental right and a vector of "good societal health"

The re-empowerment of citizens through the establishment of participatory mechanisms and the subsequent rehabilitation of their fundamental right to inhabit and manage the city can be, in itself, a source of personal fulfilment and well-being.

Whether it concerns the evolution of their living environment or the definition of development projects, the aim is to give citizens the opportunity to express their needs, to be heard and to contribute to collective reflection. This "empowerment" also serves collective well-being by capitalising on the expertise of citizens to improve their living environment, in which they are the leading experts. Involving citizens in the governance of projects, throughout the process, is based on the mobilisation of dedicated tools: participatory diagnosis in the form of urban wandering to identify the issues, role-playing or collaborative workshops to co-construct projects, etc.

Citizen involvement throughout the process

Taking health into account in projects implies defining and prioritising the health issues specific to each social and regional context.

This is a stage at which it is essential to involve residents, identify their health and well-being issues and collect data related to the perception of their health status or their habits and behaviours (diet, sleep, physical activities, etc.).

Many citizen involvement initiatives can be identified during the design, implementation and monitoring phases of the project. Examples include: Localised mechanisms to measure the population's perceptions of a region, co-design and testing of services and equipment conducive to healthy practices and running discussions on well-being issues in public areas. In order to be truly effective, these approaches must be long-term, have a representative sample of the population and remain agile.

Bouygues Construction Reference

An urban planning approach conducive to health at La Chocolaterie

(Noisiel, Torcy - Seine-et-Marne)

While its name is evocative, the site of the former Menier chocolate factory is just as promising! Straddling the communes of Noisiel and Torcy in the Seine-et-Marne department, this historic site has a major heritage identity on a regional scale and a remarkable landscaped environment on the banks of the Marne river. In 1996, after a period of abandonment, an initial rehabilitation project restored the site to its former glory to accommodate the headquarters of Nestlé France, which moved to Issy-les-Moulineaux at the beginning of 2020. In this context, the redevelopment of these 14 hectares was entrusted to the urban projects department of Linkcity France, in conjunction with Bouygues Bâtiment Ile-de-France.

The challenge shared by the cities of Noisiel and Torcy, the urban community, the Ile-de-France Region and the State is to transform this closed site into a genuine neighbourhood, open to its environment and offering a rich and diversified programme comprised of:

- **The "Cité du Goût" ("City of Taste"), a tourist destination with hotels and seminar areas, a cultural, event and experience-based site developed around chocolate;**
- **The "Cité Productive" ("Productive City"), where food processing and production activities will take place, creating local employment;**
- **The Marne neighbourhood, a lively and attractive neighbourhood on the banks of the Marne river, with urban planning that fosters health and that will encourage residential development.**

This healthy urban planning approach is based on a health and environment diagnosis carried out by a multidisciplinary team including Zefco (authorised representative), Urbapilot, [S]CITY and Elan. In an analysis matrix, it combines elements relating to the environment (natural ecosystem and material and energy flows) and those relating to health (environmental health, living health, health and lifestyles and mental health) to identify urban, programmatic and usage proposals to be developed.

A diagnosis of environmental health and a "mental health" research protocol

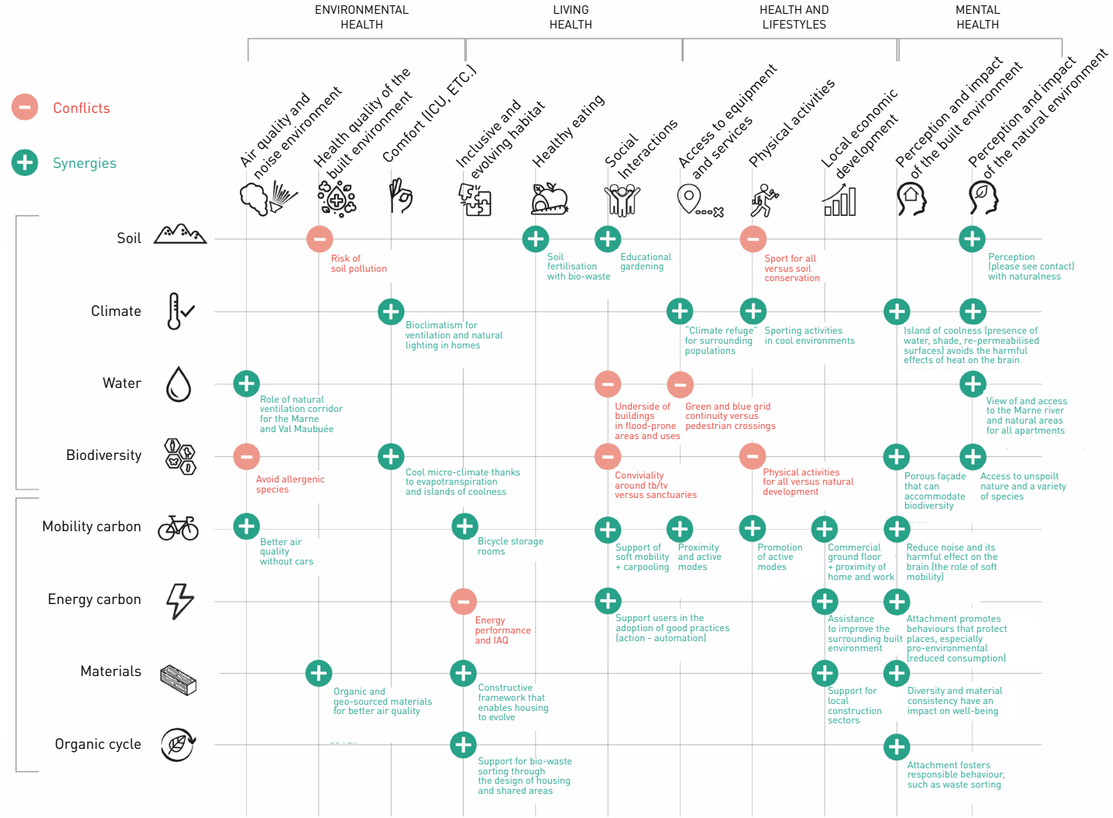


At the end of the diagnosis, these proposals are grouped into five main themes that guide the design of the project:

- **Combine the preservation of unspoilt natural areas and uses**
- **Offer a micro-climate refuge**
- **Move around in one's neighbourhood**
- **Raise awareness and make healthy eating accessible**
- **Pass on the history of the site through the project**

The approach is also based on a "mental health" research protocol conducted by cognitive science researchers and led by [S]CITY. Since our brain has evolved in natural environments over millions of years, it is less suited to the highly urbanised environments that have recently appeared in the evolution of the human species and are modifying its functioning. The protocol established aims to understand which natural and/or built elements of the Chocolaterie site can be beneficial to mental health and restore cognitive functioning, in order to preserve them as efficiently as possible. It includes workshops carried out with people familiar with the site to produce an experience-based and emotional map of the area and a diagnosis carried out with people unfamiliar with the site to assess the physical and sense-related qualities of the area, with particular attention paid to the natural setting (colour palette, presence of the sky, water, vegetation, noise) and the built environment (street width, height of buildings, geometry of buildings, variety of façades, age of buildings). All of the qualitative and quantitative data collected is used to formulate general recommendations for the future neighbourhood, in order to promote a favourable impact on well-being and mental health. These recommentations are the first step of the project, which is expected to be completed in 2024.





• Diagnosis of the synergies and conflicts resulting from the intersection of environmental (Zefco, Elan) and health-related (Urbapilot, [S]City) themes



Action-research

“For health purposes, I move around in my neighbourhood”

(Saint-Denis)

The action-research project “Pour la santé, je bouge dans mon quartier” (“For health purposes, I move around in my neighbourhood”) began in Saint-Denis in 2013 in a priority neighbourhood of the policy of this city of around 7,000 residents.

Led by the City of Saint-Denis, the Saint-Denis Healthcare Centre, the Ile-de-France Regional Health Agency and the Directorate General of Health, its dual objective was to increase the practice of residents’ physical and sporting activities by at least 20%, in order to limit the occurrence of chronic illnesses, and to identify efficient levers for developing the practice of physical activity among a given population. The programme began with a six-month research phase (meeting with 300 residents and 80 professionals) to assess the level of physical activity of the population and to understand the obstacles to the practice of physical activity in the neighbourhood. This diagnosis led to the implementation of several actions which include the creation of a pedestrian plan to increase the “walkability” of streets in the neighbourhood. Other actions included the creation of weekly walking groups as an incentive for physical activity, as well as the installation of sports facilities with local youth to create an environment conducive to physical activity.



Food project research project

“Urban Oasis”

(Annecy)

Conducted in Annecy by the Tribu design office in partnership with CAUE 74 and CASA Architectures and co-financed by Ademe, the Urban Oasis research project aims to provide methods and tools for the design of urban oases in cities such as, *“interludes that produce a feeling of calm that make people feel they have left a city where everything happens in a hurry”*.

The research focused on what makes a place an urban oasis for its residents, based on their feelings and representations. The interviews, recordings and measurements carried out in five urban environments of the city of Annecy, which can be likened to urban oases, provided a basis for the implementation of methods, diagnostic tools and the design of urban oases. This original “ambiance” approach proposed a new method for the design and building of cities which differs from the functionalist method that a accomodates spaces based on their use (ex. parks, squares, gardens, etc.). The question of senses is positioned at the heart of the reflection. Omnipresent plant life, a cut-off effect, a peaceful acoustic atmosphere, cool spaces in summer, access to sunshine in all seasons, a high-quality view, a plurality of uses and a close relationship with housing are the areas to be explored in designing urban oases.



Metropolitan food project

“2030 model of a sustainable food system”

(Metropolis of Dijon)

Winner of the TIGA (Territoires d’Innovation - Grande Ambition (Innovative Regions - Great Ambitions)) call for expression of interest, the Metropolis of Dijon project aims to make the Dijon catchment area “the showcase of high-performance and sustainable agriculture in urban and suburban areas, based on viable economic models for local production that creates jobs”.

The issues of urban and suburban agriculture, agri-ecology, biodiversity, environment and food are explored through a wide range of projects. These projects include: market gardening, diversification production, short circuits, replanting and development of Dijon vineyards, vegetable production and the creation of a Dijon-agri-ecology label. The approach is intended to be systemic, affecting all production, exchange, processing, distribution and consumption activities in the region and mobilising the entire regional ecosystem: farmers, research and higher education organisations (INRA, the Centre des Sciences du Goût et de l’Alimentation (Centre for Taste and Food Sciences), the Agrosup Engineering School, the University of Burgundy Franche-Comté), companies, the Food Tech innovation network, the Vitagora (agri-food) and AgrOnov (technology park dedicated to agri-technologies and agri-ecology) competitiveness clusters. The regional food system is being redesigned to benefit “better and healthier eating” and by developing local food chains. This approach echoes the major lessons learned from the INRA’s recent multidisciplinary programme on the national dynamics of the re-territorialisation of food, which highlighted the importance of food subsidiarity (substitution of one system, scale or production method by another) and rebalancing actions, rather than the search for full food autonomy[1].



[1]Source: Result of more than 200 interviews with national and regional players and the collection of figures, presented at the “Re-territorialisation of food: contributions to the sustainability of food systems” symposium, coordinated by INRA, in November 2019.

Developing a network of places and services based on the opportunities provided by new medical practices to enable care to be provided as close to populations as possible

The reorganisation of the health system is under way: it is based on the development of outpatient care and health networks, to benefit gradual and coordinated care of patients.

As a result, new regional organisation of healthcare provision, hospital specialisation, the growth of primary healthcare centres and the development of telemedicine are reconfiguring the medical landscape. Regions see this as an opportunity to meet current challenges:

- Those linked to **demographic and epidemiological transitions:** ageing of the population and increase in the number of dependent elderly people, explosion of chronic diseases, etc.
- Those related **to the organisation of the health system:** compartmentalised health system, regional inequalities in health, medical desertification, lack of young doctors setting up private practices, saturation of emergency services.

Developing new local healthcare facilities, combining the provision of care and the preventive aspect

As a new player in so-called "city" healthcare, Multi-Professional Healthcare Centres (MPHCs) are becoming a pillar in the reorganisation of primary care provision in regions:

- They promote multi-professional healthcare practices, by bringing together health players in a single location;
- They contribute to smooth and coordinated care pathways by forging links with other healthcare structures (hospital, medical and social establishments) and by developing services adapted to outpatient care (for example, promoting home-based ageing well and returning home after a hospital stay);
- They are based on an overall approach to health, combining the provision of healthcare and the preventive aspect.

These local structures make it possible to reach patients as close as possible to where they live and contribute to the strengthening of the medical fabric in vulnerable areas (for example, priority neighbourhoods in urban policies).



Local authorities are becoming increasingly involved in the organisation of so-called "city" healthcare, in order to attract professionals to their region

Constructive methods to support development objectives

The support of the public authorities and the preference shown by young doctors for multi-professional and even salaried practice favours the expansion of MPHCs.

France had 910 MPHCs at the beginning of 2018 and these structures are set to multiply, called upon by the government to become the norm. Construction methods must adapt to accompany this need for massive and rapid development. The innovative off-side wood-frame construction process is a means to meet this challenge while remaining environmentally friend by guaranteeing quality and energy performance.

Spaces designed in line with the needs of the region and users

In order to ensure that these structures meet the needs of users in the regions (practitioners, patients, local residents), the development of MPHCs must be based on methods and prerequisites that cannot be ignored:

- Conduct upstream socio-sanitary diagnoses to identify health issues and needs and size medical programming accordingly;
- Co-construct property development and medical projects with the authorities and major health players in the region;
- Encourage extended time slots to avoid the phenomenon of transfer to hospital emergency services, which are already saturated;
- Design healthcare centres as living labs, which host innovations and health start-ups in the region;
- Organise attractive working conditions for health professionals (management of administrative tasks, salaried work, etc.);
- Design spaces that encourage collaboration between practitioners and facilitate dialogue within health networks;
- Design healthcare centres to be friendly, welcoming, open and lively places to live;
- Put prevention at the heart of healthcare centre projects.

Bouygues Construction Reference

Confluence Health Alliance

(Lyon 2nd)

In the heart of the Confluence neighbourhood in Lyon, the Alliance Santé Confluence medical project is part of an urban innovation approach focused on the health and well-being of populations. Led by Linkcity, Bouygues Construction's property development subsidiary, it was co-designed with a major scientific committee and local stakeholders. This innovative concept of a health space combines primary healthcare and prevention, in a spirit of proximity and openness to the neighbourhood:

- Multi-professional healthcare centre including a sports-health space, managed by Office Santé;
- An occupational health centre operated by the Work and Health Action Centre;
- An imaging centre operated by Safeguard Radiologists;
- A third place dedicated to prevention, hosting conferences and health promotion workshops led by local players and associative partners;
- An offer dedicated to healthy ageing, based on a Pharmagest actimetry programme.



Opening up health areas to the city and neighbourhoods, in a comprehensive approach to promoting health among populations

Primary healthcare centres, first and foremost multi-professional healthcare centres, are essentially local structures, located as close as possible to the populations. However, in order to reach citizens and to truly benefit health in their region, they must be designed to be friendly, lively and open to all.

Similar intentions are influencing hospital establishments, driven by the Hospital, Patients, Health and Regions Act of 2009. This law encouraged hospitals to rethink their healthcare mission by extending their scope of action to include prevention and health promotion for populations. In this vein, the Ile-de-France RHA launched the “Hospitals and regions that promote health” initiative in the “Petit Nanterre” political sector of the city, which includes the Nanterre Hospital Care Reception Centre (HCRC) (please see interview on pages 60-61). The aim was to design a hospital property development project and an urban development project in an integrated manner, by promoting architecture and urban planning that is conducive to the health of users. In particular, the urban interfaces between hospitals and surrounding neighbourhoods, accessibility, mobility, the quality of the health of spaces and the sustainable management of resources were central to these reflections.

Beyond this mission of health promotion and from an urban standpoint, hospitals are increasingly exploring their interface with cities, by asserting themselves as living, open places to be passed through. This is evidenced by the numerous initiatives to develop breathing spaces and to propose a cultural offer in the public spaces of these establishments. In Paris, the green spaces of the Pitié Salpêtrière hospital thus serve as a park and picnic area for neighbouring populations and the hospital chapel hosts several art exhibitions throughout the year.







Bouygues Construction Reference

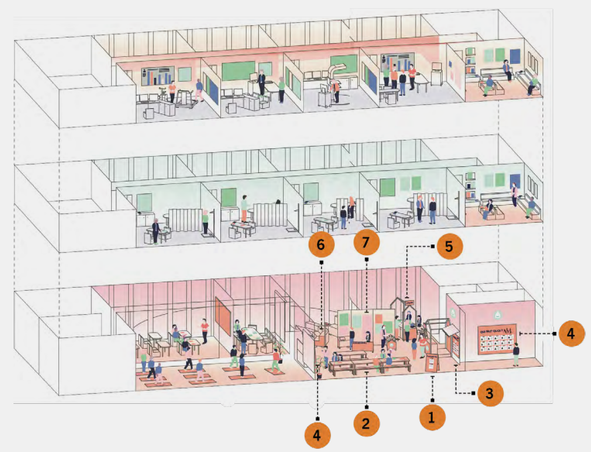
The healthcare centre as a third place in the health and well-being path of residents

Our vision of healthcare centres is that of places designed to shine in their neighbourhoods. We propose that traditional waiting rooms be transformed into coordinated third places open to all, which become places of reference in the neighbourhood and in the daily life of populations:

- A warm architecture and universe, breaking with the codes of medical architecture to make it a generous place, where people enjoy spending time and recharging their batteries;
- An event-based programme focused on health prevention to raise awareness of major health determinants (diet, ageing well, etc.);
- Health-sports centres organising physical activities that are friendly and adapted to various profiles;
- Green spaces, backed by therapeutic gardens, supports for therapeutic activities and spaces for contemplation and sensory stimulation;
- Pathways to detect frailties (loss of sight, difficulties in walking, speaking, grasping objects, etc.) to encourage rapid treatment and limit the development of dependency.

Designing healthcare centres that are open to their neighbourhoods

1. Information on events
2. A caregivers’ café conducive to discussions and meetings
3. A reinvented reception terminal
4. Mapping of the health players in the neighbourhood or RHPCs (Regional Health Professional Communities)
5. Adapted and adaptable furniture for prevention workshops
6. Spaces to host conferences for the general public
7. Below we propose a usage plan with plausible scenarios



Work carried out in collaboration with the Vraiment Vraiment® office, based on a study of use and questions put to care and prevention professionals.



Marie Chabrol
Director and founder
Urbapilot

Feedback on the “Hospitals and regions that promote health” approach in the Petit Nanterre sector and the Hospital Care Reception Centre (HCRC) sector



Urbapilot was involved in the “Hospitals and regions that promote health” experiment launched by the Ile-de-France RHA[1], with the support of the City of Nanterre, on the “Petit Nanterre” sector of the city’s policy, which includes the Hospital Care Reception Centre (HCRC) in Nanterre. What were the goals and the main principles of this approach?

This approach is based on the opportunity to rethink hospitals beyond their healthcare missions and to extend their scope of action to make them places that promote the health of populations in their extended region. The objective was to translate this overall approach to health into the site’s urban and architectural project, taking local specificities into account.

• The Petit Nanterre sector is an area of strong urban and demographic dynamism but it also presents a contrasting environment in terms of services and amenities, with many local resources (high density of associations, public services, green corridors) but also multiple imbalances (poor diversity of food shops, lack of sports facilities, difficult access to the river Seine).

• The HCRC site suffers from a low level of appropriation by staff members, users and local residents due to problems related to a lack of safety, degradation, a lack of maintenance of open spaces and the gradual closure of services and friendly areas.

• The population present in this sector includes a diversity of vulnerable population groups, related to the history and function of the site, which includes social, medico-social and healthcare activities. Thus, we find people (some of them in very precarious situations) with the chronic and/or mental pathologies of elderly people on the HCRC site; but also young children, single-parent families and poor workers with specific health problems (for example, the prevalence of obesity) in the Petit Nanterre neighbourhood.

This territorial context presented a challenge for opening up the HCRC to the city and highlighted the need to take into account the needs of the vulnerable groups in the choice of programming and composition of public spaces.

How did this translate into the methodological approach?

The multidisciplinary team (urban planning, landscaping, hospital architecture, environment, sociology) took advantage of all available levers (strategy, urban planning, architecture) to build a comprehensive health project based on four areas:

• Economic development and inclusion of local populations;

• Social practices and meeting places;

• Promotion and prevention of health through outdoor spaces and nature in the city;

• Improvement of the urban environment and reduction of harmful environmental factors.

Reflections on the site transformation project occured during a collaborative workshop with all users from hospital staff to end users. Initially, the groups thought about how to position transformation within the overall urban fabric of the neighbourhood and how to include the site as an integral part of the neighbourhood. Subsequently, on the basis of inspirational elements prepared by the team, they designed concrete actions and solutions to give substance to the project.

[1]Source : Agence régionale de santé

The results of the approach take the form of project sheets that outline the main principles of development and programming. Could you give us some examples of content?

Based on health determinants conducive to urban planning, project sheets explore the various aspects of a comprehensive health project: support of transformation, places that promote community life, organisation of internal movements, hospital garden frameworks, etc.

The hospital garden network, for example, meets several objectives:

• to make the hospital project participate in the green and blue network being set up on a regional scale and with a goal of urban resilience;

• to reflect on biodiversity and its place within the hospital site;

• to incorporate hospital and neighbourhood gardens into therapeutic approaches.

This question of the use and redeployment of physical and recreational activities and the strengthening of social ties around green spaces have also emerged as fundamental.

Suburban gardens are planned as a structuring element of the hospital project and can be used at the level of one or more hospital departments. They can be the subject of themes, depending on the intended use and the hospital programming of the buildings that surround them.

hospitals are increasingly exploring links with cities



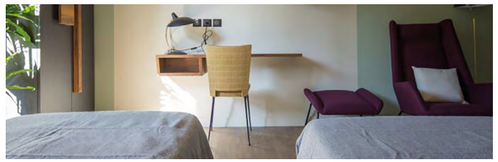


Developing places that address the specific issues of loved ones and caregivers

Beyond care and prevention, new places and services are emerging to support the daily lives of caregivers, those people who provide assistance to loved ones who are ill, disabled or losing their independence.

In France, there are an estimated 11 million caregivers, the majority of whom are working women under the age of 50[1]. The many difficulties they encounter (stress, fatigue, isolation, economic difficulties) often have repercussions on their personal and professional lives and multiply the risks of chronic illness. Nevertheless, the concept of caregivers has gained visibility in recent years and their status is now better recognised and managed. The latest advances to date are the law to promote the recognition of family caregivers, promulgated in May 2019, and the announcement of the introduction of paid leave for caregivers who are supporting elderly, ill or disabled relatives.

Numerous initiatives are being developed in regions, particularly in the Lyon conurbation. In addition to the opening of the first “respite home” (please see page 63), it is here that the first one-stop shop for aid to caregivers, named “Métropole aidante” (Supportive metropolis), was created. Supported by the Auvergne-Rhône-Alpes regional health agency, the Lyon Metropolis, the France Répit Foundation and a large group of associations, this approach aims to federate all the initiatives and solutions provided in the region, in order to make them easier to understand and to provide support. It takes the form of a website, a single telephone number and a site providing reception services, information and guidance.

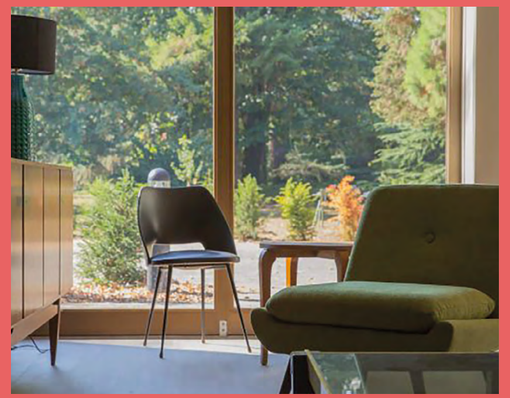


[1]Source: Caregiver barometer, BVA/Fondation April, 2019





Inspiration



Reception and respite centre

Maison de répit

(Tassin la Demi-Lune)

The first establishment of its kind in France, the Maison de Répit (Respite Home) provides ill and disabled people and their caregivers with a place to rest and recharge their batteries when caregivers are no longer able to care for their loved ones and to prevent exhaustion.

It is built in the heart of a one hectare wooded property 10 minutes from Lyon, in a natural setting and with a “homely” atmosphere conducive to care, well-being, tranquillity and conviviality. Support is provided by trained professionals and volunteers. It includes 30 days of reimbursed annual respite, medical supervision and continuous care for vulnerable people. It also includes psychological and social support, opportunities and time to talk and meet up, and well-being activities for caregivers who choose to remain on site.



Accommodation alongside hospitalised loved ones

La Maison des familles

(Poitiers)

Located on the site of the Poitiers University Hospital Centre, La Maison des Familles (Family Home) enables those who live far from Poitiers to stay with their child, spouse or friend hospitalised in the University Hospital Centre.

The structure was created in 1993, at the same time as the “Un hôpital pour les enfants” (“A hospital for children”) association, whose aim was to design a place to accommodate the parents of hospitalised children. In 1997, the “La Maison des familles” association, which manages and operates the house on a daily basis, was created. The house is designed to be a real home, with a friendly living room (board games, library, television, billiards), a shared kitchen, a dining room, a landscaped terrace and 29 bedrooms and studios. Each year, more than 1,500 families are accommodated, living there at their own pace and in complete independence, with no time limit (a third stay more than two months) and with a limited financial contribution from families (a modest financial contribution that decreases according to the length of the stay). In addition to accommodation, “housekeepers” and volunteers listen to and support occupants, in order to provide comfort and support in difficult and trying times.

Designing and constructing buildings that respect people

Collective awareness of the impacts of buildings on health

This role of accommodation is the primary function of buildings. This is one of the reasons why we spend an average of 80% of our time in enclosed spaces today.

However, this protective role was shaken in the 1990s by the asbestos scandal and the emergence of the problem of indoor air pollution in buildings, which has since become a real public health issue. According to studies, the air inside our buildings is 5 to 10 times more polluted than the atmosphere outside. In 2013, this observation led to the first Indoor Air Quality (IAQ) Action Plan in France, which was incorporated into the National Health and Environment Plan (NHEP). Legislation has also accelerated on this subject, making it compulsory to monitor indoor air quality in childcare facilities, nurseries and primary schools in 2018 and in leisure centres, middle schools and high schools in 2020, with the aim of extending it to all other establishments open to the public by 2023.

Increase in the number of labels relating to the health and well-being of occupants

Since then, this collective awareness of the impact of buildings on health and the multiplication of scientific studies have led to several labels and certifications to introduce goals and monitoring indicators relating to health and well-being.

These labels are issued to any property development buildings that comply with them. Although they now mainly concern office buildings and focus on themes relating to physical health (healthy materials, air quality, visual and acoustic comfort, etc.), some are intended to apply to all types of buildings and increasingly incorporate criteria relating to social health, well-being and quality of use.

"Human beings are dependent on their environment and this dependency makes them vulnerable to the characteristics of their various living spaces. They have always sought to protect themselves against natural elements: cold, heat, rain, wind, sun, lightning, etc."

This can be read on the website of the Sustainable Building Plan, a network of building and property development players working together to achieve energy and environmental efficiency in buildings.

Health and well-being labels in buildings

- **WELL**
  Organisation: LEED
  Launch: 2014
  Theme: General (air, water, food, light, physical activity, comfort, spirit)
  Target: offices, housing, commerce
- **INTAIRIEUR**
  Organisation: Immolab
  Launch: 2017
  Theme: Specialised IAQ
  Target: new housing
- **OSMOZ**
  Organisation: Certivéa
  Launch: 2018
  Theme: Workplace environment
  Target: offices

The opinion of the "Réflexion Bâtiment Responsable 2020-2050" ("Responsible Building Reflection 2020-2050") work group

The implementation of these types of qualification systems for the quality of the built environment and its surroundings helps to incorporate well-being and public health into the heart of building construction or renovation operations. However, in order to be truly effective, even if this is a utopian goal, particularly at the European level, we should aim for a convergence of certifications in the field of health, covering design, construction, operation and maintenance.

Over to...



Suzanne Déoux

Doctor of medicine

Honorary Associate Professor at the University of Angers, Founder of Medieco, President of Bâtiment Santé Plus and initiator of the conference Les Défis Bâtiment Santé, member of the Réflexion Bâtiment Responsable 2020-2050 work group

The buildings of tomorrow, respectful of human health



Launched in 2011 as part of the Sustainable Building Plan, the Réflexion Bâtiment Responsable 2020-2050 work group published a document at the end of 2019 entitled "Responsible Building and Health". What reasons led you to include health in your forward-looking thinking on the buildings of tomorrow?

Health is the most precious asset of human beings. It is omnipresent in both individual and collective concerns, from birth to the end of life. Whether it accommodates life, organisations, leisure activities or economic activity, the building industry protects people, property and activities. The issues and challenges of the relationship between buildings and health are therefore multiple. Keep in mind that the primary vocation of the building and civil works sector is to preserve and protect human health, from design to the operation of the built environment, in connection with its environment. Players are becoming increasingly aware of the need to put human beings and their health at the heart of their actions.

You defend a dynamic definition of health, as a "successful eco-adaptation to our environment". Since the built environment is the primary environment of human beings, the importance of the link between health and buildings is better understood. But how does the building industry make demands on us?

Through breathing, we are in permanent contact with our environment. The quality of the 15,000 litres of air we inhale every day conditions the nature of the atmospheric compounds transferred to our blood and all our organs.

Through our five senses, we perceive the characteristics of our different living spaces. Our senses are closely linked to our vegetative nervous system, our "autopilot" that regulates the various vital functions of our bodies (digestion, breathing, blood pressure, etc.), without our being aware of it. Take the example of noise, whose impact on humans is often discussed in terms of "auditory comfort" or "acoustic discomfort". However, the consequences go beyond these subjective effects! It is the functioning of the body itself that is affected. It is estimated that the health expenditure generated by the consequences of the French population's exposure to noise, the first of which is sleep disorders, amount to €57 billion per year[1]. The same reasoning applies to light. It helps to synchronise all biological rhythms, but we limit ourselves to handling it from the "visual comfort" standpoint.

In addition to these five senses, there is also the general sensitivity through which our bodies pick up a large quantity of information related to our environment: perception of cold, heat, perception of the position of different parts of the body in relation to space, etc.

With the electromagnetic environment, interactions with the human body take place without the intermediary of any specific structures. However, the electromagnetic radiation created artificially by human beings today exceeds that which exists naturally on the surface of the Earth. The sensitivity of children to this exposure is one of the major questions concerning long-term effects and requires the application of the precautionary principle to limit it as much as possible, whether at extremely low frequencies in electrical installations or at the microwave frequencies of mobile phones.

[1]Source: Le coût social du bruit (The social cost of noise) - Bibliographical analysis of French and European works. CNB/ADEME 2016 report

As essential to life as air, water is subject to continuous monitoring. It is the most controlled food product. Its quality must be impeccable, by ensuring that its transfer into pipes or equipment does not disperse pollutants and bacteria.

For you, a responsible building is first and foremost a way of meeting the essential needs of occupants. What are these needs and how do they change depending on the people the building accomodates and the activities it hosts?

The building must take into account different types of needs (physiological, sensory, sense-related, psychological and societal). Recommendations concerning “housing” buildings, “training” buildings and “corporate” buildings are adapted to the functional goals and requirements of the profiles of their occupants. Similarly, changes in the use of buildings and their reversibility must take into account the fundamental human requirements of their future use if health, in its overall sense, is to be preserved.

Take the example of young children. Their vulnerability to the built environment is greater than that of adults. It is therefore essential that all their needs be properly addressed in the living spaces that accommodate them. According to the work of Michel Picard of the School of Speech Therapy and Audiology at the University of Montreal, current noise levels in childcare facilities significantly reduce speech intelligibility and verbal learning in children. 70% of older children consider themselves disturbed by noise when reading and more than 60% consider that they have difficulty concentrating in a noisy environment, according to acoustic measurements and the survey conducted in Lyon by Acoucité among 300 children aged 9 to 11. Good acoustics in a school are not a “plus”. They are a criterion that is intrinsic to the very function of schools as places of communication and knowledge acquisition.

You conclude the document with several recommendations for buildings that respect human health. What are these recommendations?

The first concerns construction materials in the building industry (traditional, low carbon, circular economy, etc.) and notably includes the implementation of a health assessment of these materials, installation products and equipment for builders and manufacturers.

The next question is the consideration of the impact of the daily environment on human well-being, notably through models used to measure the impact of buildings on uses (performance of education, business, etc.).

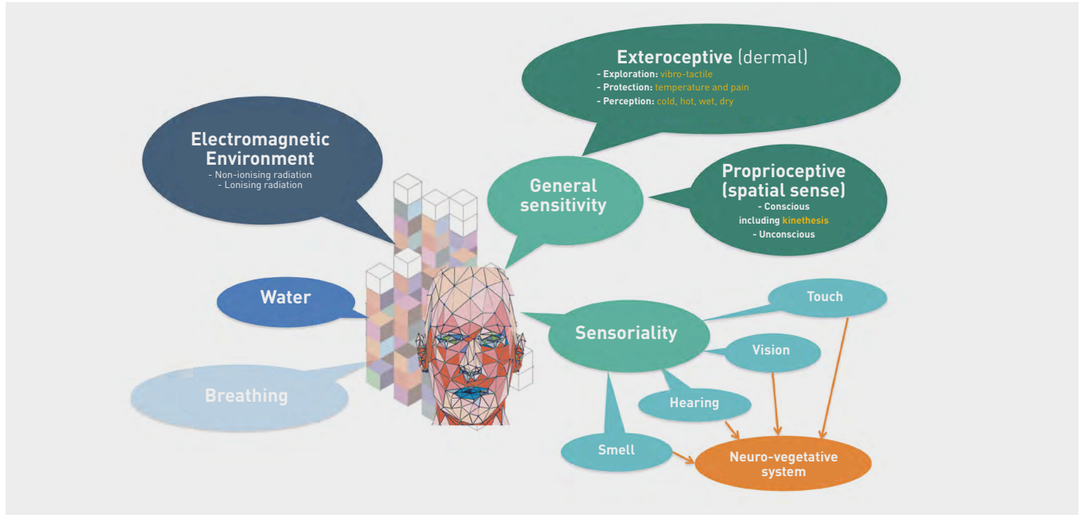
Finally, health must be dealt with in a comprehensive manner, including physical, mental and societal health, and extended to city and regional development: these approaches must go beyond buildings alone to extend to urban planning and, more broadly, to the environment. The themes raised in this document include: mobility, inclusiveness, social links, circular economy and culture. Exploring the therapeutic function of buildings and the city as well as promoting art in all its forms, while respecting the quality of life of the occupants, are also raised.

Typology of human needs

Physiological needs: breathing, sleeping, drinking, eating, eliminating, resting, moving around

Sensory and sense-related needs: seeing, hearing, smelling, touching, tasting, feeling (temperature, humidity, space)

Psycho-social needs: privacy, aesthetics, care, safety, conviviality, local services, biophilia, peace.



A building that contributes to health prevention

Buildings interact with many health determinants: water quality, air quality, electromagnetic fields, sound environment, light, temperature, safety, social interactions, physical activity, food, access to services and equipment, etc.

These are all levers to be explored and operated to positively impact the physical, mental and social health of their occupants. Buildings have a particularly important role to play in health prevention, by minimising exposure to risk factors (for example, pathogens) and maximising the impact of protective factors (for example, active design, integration of living things).



Limiting exposure to pathogens

A building that is conducive to health limits the exposure of its occupants to pathogens, whether physical (particles, electromagnetic radiation, fibres, etc.), chemical (volatile organic compounds, etc.) or biological (mould, pollen, etc.).

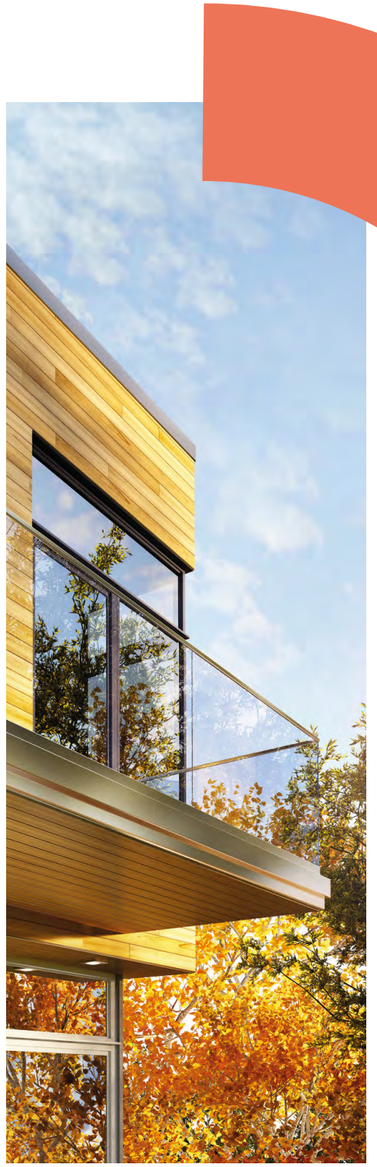
In France, construction and decoration products have been subject to mandatory labelling since 2012 with respect to their volatile pollutant emissions. A classification from A+ to C provides information on the level of emissions of ten pollutants, with the A+ label assigned when all values are below health thresholds.

In addition to building-specific sources, the outdoor environment, equipment and its maintenance and the behaviour of occupants can also be responsible for the presence of contaminants in indoor air. Significant transfers of pollution from outdoor air to indoor air are particularly likely to occur in areas that are repeatedly exposed to specific sources of pollution (road traffic, industrial sites, urban heating, agricultural phytosanitary treatments, etc.). Moreover, they were the subject of a study published by the Anses (National Agency for Food, Environmental and Occupational Health Safety) in 2019[1].

The reduction of the exposure of occupants to these agents is based on the combined activation of various types of levers: use of low-emission or labelled materials, increase in ventilation flow rates, maintenance of equipment such as ventilation through regular servicing, measurement of air quality inside the building and awareness-raising, filtration treatment of the air brought into buildings and support for users in everyday actions, such as the ventilation of housing units.

Since
2012
construction and decoration products have been subject to mandatory labelling

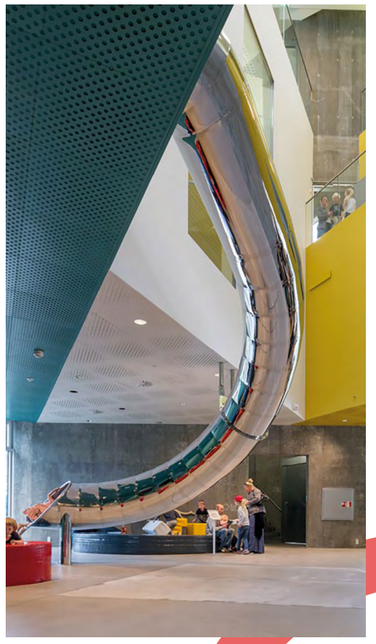
[1]Source: Caractérisation des transferts de pollution de l’air extérieur vers l’intérieur des bâtiments (Characterisation of outdoor air pollution transfers inside buildings), ANSES, 2019



Active design to encourage movement

Created in Canada, the concept of active design, which identifies urban and architectural principles to promote a physically active lifestyle, is part of the movement towards environments that are conducive to healthy lifestyles.

This approach, which stems from urban development, can be applied to the world of construction to combat sedentary lifestyles and related illnesses and to free up movement, which is a natural principle of life. In tertiary property development, this is reflected by a fast-growing interest in developments, equipment and uses that promote a mobile and active stature: movements between complementary spaces (conventional services, creative spaces, meeting rooms, relaxation areas), standing offices, meetings while walking. The approach is also beginning to spread to the world of housing, as in apartment buildings, and certain concepts, such as KuBe in Copenhagen, are pushing experimentation to the limits (please see page 71).







Social design of buildings

As urban microcosms, buildings are places where the diversity of social configurations specific to human life are expressed, whether they relate to intimacy, social relations or forms of sociability.

The design of buildings must integrate this social dimension and support this capacity to forge links, within the building but also in its relationship with the block, the neighbourhood, the city or its external environment.

The design of flows inside buildings and the programming of spaces promote meet-ups between users and sharing, while preserving spaces for personal breathing. This is the direction of several current projects. Apartment buildings, for example, accommodate an increasing number of shared spaces on roofs, on ground floors or in the heart of buildings, which encourage users to come together around common activities or projects. The hybrid building concept, which promotes a mix of uses and a diversity of user profiles, aims to intensify porosities between buildings and their environment.

[1] Source : Penser les territoires autrement. Observatoire des usages et représentations des territoires, 2020, L'Obsoco, Chronos / Ademe, Banque des Territoires, Bouygues Construction, Groupe La Poste

Buildings that reflect the living world

Living in a place where it is possible to be in contact with nature is a deep desire of the French who consider it to be the most important element when asked to characterise their ideal place to live [1].

This result is hardly surprising if we consider the notion of biophilia, which supports the innate affinity of human beings with the natural world. This desire to surround oneself with the living world is reflected in the building sector through the incorporation of natural elements (fountains, waterfalls, plant walls, gardens, etc.), in order to benefit the physical, mental and emotional well-being of occupants.

Staying connected with nature. Biomimicry, an approach consisting of drawing inspiration from the principles of living things (forms of living things, materials and manufacturing processes that operate in living beings, interactions that species develop among themselves, the overall functioning of natural ecosystems) also advocate this, in order to respond sustainably and at a lower energy and environmental cost to the issues facing our human societies. This took shape in the building sector in 1996 with the construction of the Eastgate Building in Harare, Zimbabwe, for which architect Mick Pearce drew inspiration from a termite mound to design natural, economical ventilation. Today, the subject is taking on a real dimension in the world of property development, as shown by the emergence of projects that incorporate the principles of biomimicry (please see the Ecotone project, page 69) and the launch, in October 2019, of the Biomim' City Lab, a work group that brings together property development players, whose aim is to develop the biomimetics approach in this sector.

Bouygues Construction Reference

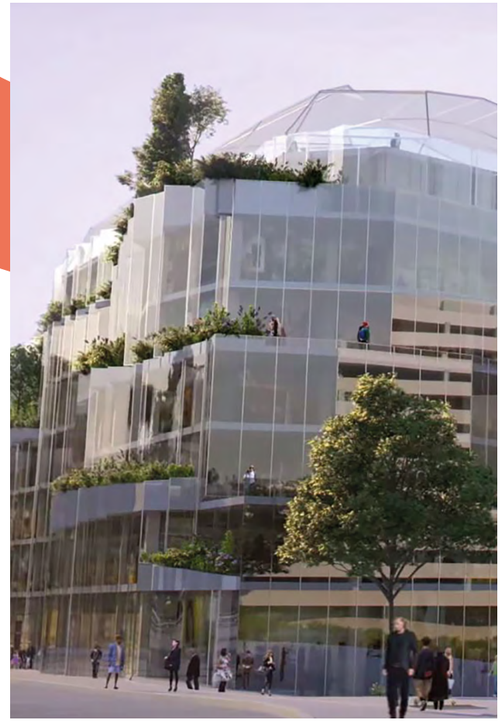
The Ecotone project

(Arcueil, Val-de-Marne)

Winner of the innovative call for projects entitled "Inventons la Métropole du Grand Paris (Inventing the Greater Paris Metropolis), the Ecotone project is a symbol of the biomimicry approach and one of the first of its kind in the world of property development.

This project (led by the Compagnie de Phalsbourg) showcases what the implementation of the biomimicry approach in property development can look like. Designed as an urban rock of glass and vegetation, the future building will open onto the city and the environment and end the isolation of an area which, today, is divided due to its proximity to two motorways. This multi-storey building with terraces and patios providing homes and workplaces with natural light features 65,000 m² dedicated to the tertiary sector, a layout designed to promote intergenerational links (residences for young professionals, temporary apartments for researchers, childcare facilities, home care for the elderly, etc.), a health and fitness centre, responsible restaurant services.





The multidisciplinary team applied the principles of biomimicry to its way of operating; cooperation and ecosystem logic fed by mutual interactions. With this in mind, the four project architects worked together using shared specifications. All of this work is supported by a scientific committee that works on biodiversity and biomimicry, comprising the Museum National d'Histoire Naturelle, the CEEBIOS (European Centre of Excellence for Biomimicry in Senlis), ELAN (property development consulting subsidiary of Bouygues Bâtiment France Europe) and Engie Lab Crigen.

Other experts may join this committee, such as professor and architect Achim Menges from the University of Stuttgart, who designed the "Hygroskin". This concept is part of the architectural experiments that shall be tested in the project; a wooden envelope, modelled on the behaviour pine cones, which will open or closed based on the relative humidity without any outside intervention or energy, for improved user comfort.



Active design in residential buildings

Via Verde

(United States)

Located in the Bronx neighbourhood of New York City, this 222-unit social housing complex consists of three types of buildings: a 20-storey tower, 6-storey and 13-storey duplex apartment buildings, and town houses.

The architectural concept is based on the integration of a suspended park that takes the form of successive terraced gardens that spiral upwards towards the planted roofs of the buildings. This public garden, a real living space, encourages residents to walk, rest, do sport, ... and to walk up the stairs to their homes rather than using lifts. The stairwells of the buildings are wide, lit by natural light and brightly coloured to encourage people to use them.



Designing a building to serve culinary education

Buckingham

(Virginia, United States)

In Buckingham, Virginia, USA, architects, doctors, researchers and educational teams thought up the design of the new kindergarten and primary school building, with health and well-being as their primary concern.

As a health determinant, food had a prominent role in the reflections and design of buildings in order to promote learning about the principles of healthy eating and the development of a culinary culture. The school thus includes a kitchen for educational purposes and culinary laboratories, making cooking a subject of study.





Building concept that mobilises the spatial sense (proprioception) of users

KuBe

(Copenhagen)

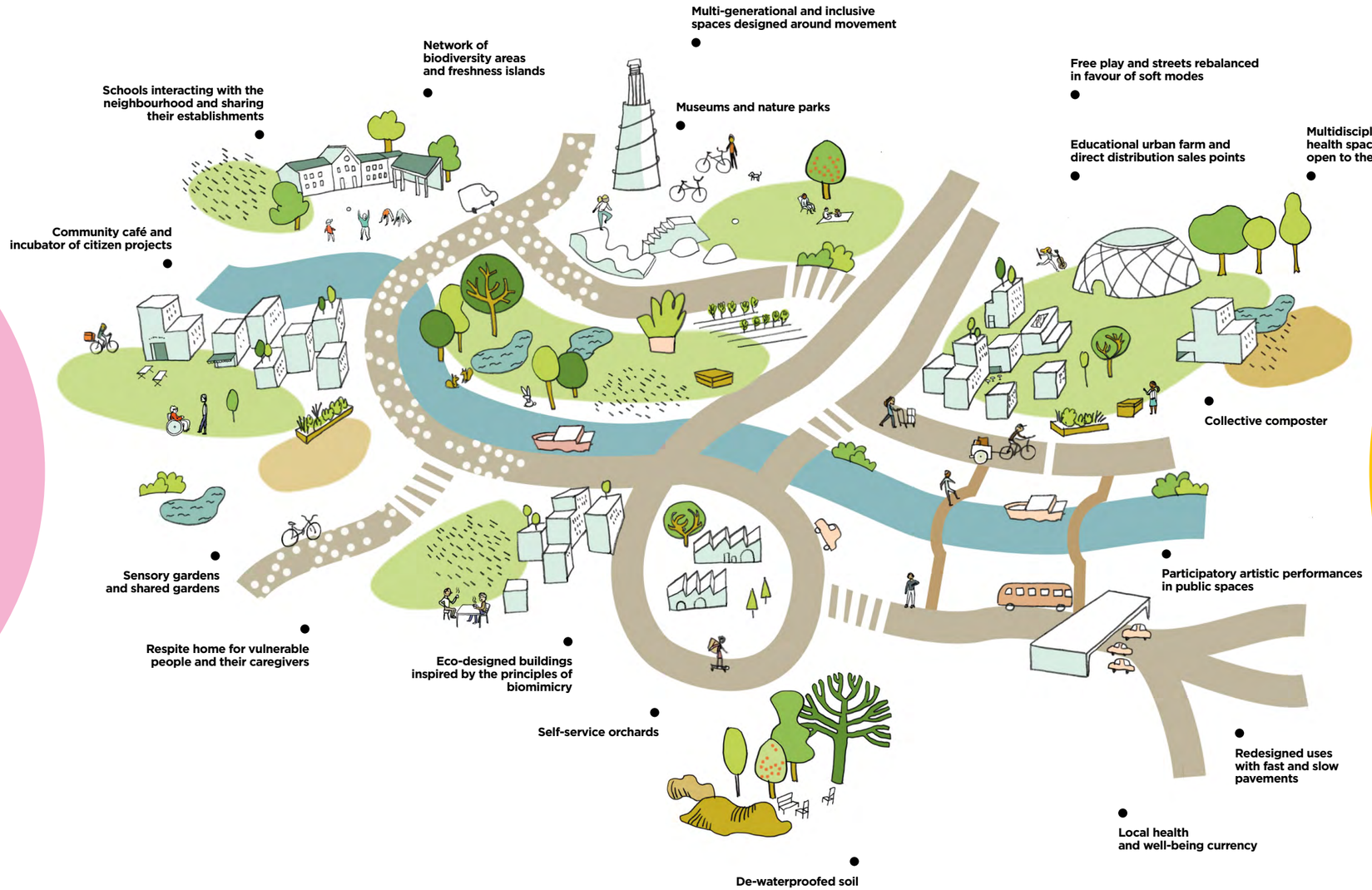
In the Frederiksberg neighbourhood of Copenhagen, the KuBe is a centre for exploring culture through movement.

Designed by the MVRDV agency, it is adapted into six volumes over a total surface area of 3,200 m², including a theatre, exhibition spaces and a circular room dedicated to the practice of yoga. Alternative movement areas are equipped with climbing slopes with holds, slides, nets and poles to encourage users to walk, run, crawl, jump, climb or slide, in order to involve them in various experiences related to movement. Floor coverings vary depending on practices: elastic for running, concrete for climbing, epoxy resin and parquet for quiet activities.

By fostering the mouvement of bodies in space, this place challenges the spatial senses of its users — something that is often forgotten when assessing the environmental quality of buildings. The body senses and understands space through its position, its movement and the situation of the various segments of limbs in relation to each other. Nerve information transmitted to the brain by receptors in muscles and joints enables the adjustment, control and regulation of posture, balance and body movement.



04. Inspiration book



This inspiration book is the result of the open and collaborative reflection (the list of participants is available at the end of the document) that Bouygues Construction carried out on healthy neighbourhoods. Which urban organisations seem to hinder or, on the contrary, encourage virtuous behaviour in terms of health? To what extent and how do the "living environments" constituted by our neighbourhoods and housing units play a role in our health status?

Sociologists, social psychologists, public health researchers, architects, doctors, pharmacists, experts in healthy urban planning, property development players, start-ups and companies in the fields of sport, food, air quality and services to healthcare facilities and many others contributed to this reflection, by sharing their visions and solutions. They compared their ideas through an approach combining design thinking and foresight and fed by expert interventions.

Citizens who co-design their living spaces



Ideas

- **Rehabilitation of the fundamental right to live and manage the city, with a focus on personal fulfilment and the need to live together**
- **Usage expertise of residents for the common good**

Inspiration

Best practice

Atelier des capucins
(Brest, France)

A participatory artistic approach to equipping public spaces as part of the project to develop an eco-neighbourhood: 5,000 residents mobilised in 3 years to create wooden furniture with multiple forms and uses with the support of cultural associations and architect collectives

Solution

CityPlay
LinkCity

An urban co-design tool used to group all stakeholders of an urban project (local authorities, residents, shopkeepers, architects) around a role-playing game, in order to jointly define the goals of the future project, share their fears and design concrete solutions to meet these challenges

Solution

PotLoc

An on-line platform to directly survey city residents about the local shops and services they would like to see established in their neighbourhood

A dedicated health and well-being body, which supports each development project throughout the process

Ideas

- **A methodology for identifying and prioritising health issues, defining appropriate action levers to be implemented within the framework of the project and measuring and monitoring the impact of the project on the health of populations**
- **Shared governance that brings together all regional players (local authorities, healthcare facilities and players, researchers, companies, associations, citizens, educational establishments, social housing providers, etc.) and a restricted scientific committee (health and well-being professionals, researchers) that orients choices**



An approach to urban design which places the five senses at the heart of the reflection

Ideas

- **A network of urban oases based on the principles of omnipresent vegetation, a break and respite effect with other urban atmospheres, a soothing acoustic environment, cool spaces in summer, access to sunshine and light in all seasons, quality views and a variety of uses**
- **Buildings and environments that reflect the living world and are inspired by the principles of biophilia and biomimicry**

Inspiration

Solution

O Ubi Campi

Gardens designed to accompany the experience of the five senses: structuring of spaces for rich visual perception (distribution of light and shade, shades of colour, textures), introduction of foliage and materials (smooth and rough stones, wood, metal), organisation of opportunities for spontaneous gathering, amplification of certain noises (the hammering of rain, the rustling of the wind in foliage)



A healthy living environment that regulates environmental pollution and the health effects of global warming



Ideas

- **Islands of coolness and vegetation to combat urban heat island phenomena and their effects**
- **A rebalancing of traffic in favour of soft modes to reduce sources of pollution**
- **An environment that provides information on harmful factors and advice on how to behave**
- **Buildings and urban organisations that limit exposure to pathogens**

Inspiration

Best practice

Carbon sink

(Poissy, France)

In addition to tree planting, an experiment to combat urban pollution: a two-metre high cylindrical device that captures polluting particles through the photosynthesis mechanism of micro-algae. An experiment conducted over several months demonstrated an absorption capacity equivalent to that of fifty trees

Best practice

Meeting area

(All over France)

Shared streets for calmer roads: halfway between a 30 km/h zone and a pedestrian area, a concept of a pedestrian priority area open to all modes of traffic, with a speed limit of 20 km/h for vehicles and two-way roads for cyclists

Best practice

“Oasis” playground

(Paris, France)

School playgrounds transformed into urban cold islands thanks to the substitution of asphalt by materials that are permeable and suitable to heatwaves, zones of open ground, increase of green spaces (trees, gardens, green walls and roofs), creation of shady zones, setting-up of fountains, etc.

A living environment that stimulates and accompanies people in movement



Ideas

- **The use of active design to promote urban and architectural principles that encourage a physically active lifestyle**
- **An environment conducive to the practice of physical and sporting activities, which is lively and adapted to the diversity of needs (children, sedentary people, men and women practising sport, seniors, etc.)**
- **“Walkability” and “cyclability” of the environment, both for utilitarian purposes and for strolling**

Inspiration

Best practice

KuBe

(Copenhagen, Denmark)

A building that integrates alternative and playful areas (climbing slopes, slides, nets, ladders) to encourage movement: walking, running, crawling, jumping, climbing, sliding, etc.

Solution

Airfit

Multi-generational and multi-level outdoor fitness areas (students, senior citizens, sedentary people, seasoned sportsmen and women) connected to a sports coaching solution to democratise sport in free access

Best practice

Bike City

(Vienna, Austria)

Residential housing optimised and equipped for the use of bicycles (storage at the entrance of the apartments, adapted lifts, free maintenance station, bicycle areas, connection to urban bicycle paths)

A living environment that produces and promotes a healthy and balanced diet



Ideas

- **Rebalanced regional food systems, based on the development of urban agriculture and local supply chains**
- **A food supply landscape that promotes “good eating”**
- **Spaces for education and culinary and taste culture**

Inspiration

Best practice

Agropôle

(Molondin, Switzerland)

A centre for experimentation and innovation to invent the healthy food of the future: mobilising and supporting the entire agri-food ecosystem to develop solutions for all regions

Best practice

Halles Castermant

(Chelles, France)

As part of a large-scale urban project, redevelopment of halls through the integration of a third place, whose programming aims to enhance the local food and agricultural ecosystem (winegrowers, brewers, market gardeners, associations): processing workshop, short circuit sales outlet, educational areas, etc.

Best practice

Paniers solidaires

(Loone-Plage, France)

Vegetable baskets from short circuits provided at a low cost in the social centres of the city’s “priority” neighbourhoods, combined with workshops and educational events that create links around cooking

A living environment that promotes social interaction and a rich local life



Ideas

- **A public space appropriated by the collective, which becomes a living space in its own right**
- **Places and services that are welcoming and attentive to the needs of people who are vulnerable or isolated**
- **A city with local services that promotes an urban experience rich in activities and sociability**

Inspiration

Best practice

Saint-Bruno
(Saint-Bruno, Quebec)

Free play areas created in several street sections and governed by road markings, signs at the entrance and exit of the area and certain rules (time slots and clearance of the roadway to allow vehicles to pass) to encourage the adoption of a healthy and active lifestyle: developing friendships, fostering social cohesion and neighbourhood life, encouraging physical activity and creative play for children

Solution

Les Escales Solidaires
Habitat et Humanisme

Open to all, “Bistrots des amis” bistros are anchors in neighbourhoods and provide residents with activities to combat isolation by using meals as a vector of social integration

Best practice

Les Grains de Sel
(Paris, France)

A cooperative participatory supermarket where members, who are the only customers, make decisions together with respect to the management and activity of their store according to principles of solidarity, neighbourhood cohesion, support for small producers and the local economy

A supportive and welcoming living environment that facilitates the inclusion of people made vulnerable by illness, disability or dependency and that supports their loved ones



Ideas

- **The use of inclusive design to design places and services that benefit as many people as possible**
- **Places that meet the specific needs of family members and caregivers**

Inspiration

Best practice

Maison de répit
(Tassin-la-Demi-Lune, France)

A temporary home for people suffering from illness, disability or dependency at home and a respite and support solution for the caregivers who accompany them on a daily basis

Solution

Bistro Mémoire

Happy moments led by a team of psychologists and volunteers with people living with Alzheimer’s disease and their caregivers, organised in friendly public places (café, tea room, restaurant, media library) to facilitate their social integration and change society’s view of the illness

Regions that organise healthcare facilities and services as close to the population as possible and that aim for health equity

Ideas

- **Local healthcare facilities combining care provision and preventive aspects and designed to meet the needs of the region's users**
- **Healthcare facilities open to their region, in a comprehensive approach to promoting health among populations**

Inspiration

Best practice

Alliance Santé Confluence

(Lyon, France)

In healthcare centres, transformation of the traditional waiting room into a lively third place open to everyone, which becomes a reference area in the neighbourhood and in the health and well-being path of residents, with a strong focus on prevention



Path

Actions implemented by players

Evolution of people's habits

As part of the rehabilitation of Yvette's residence carried out a few years ago, **the social housing provider had worked with various players in the social and medico-social fields to adapt certain housing units.**

Yvette's home underwent various developments to make her daily life easier: shower seat, handrails, non-slip surface, etc.





Yvette Lacroix
75 year old
Retired

Place of residence: Collective social housing in the suburbs of a medium-sized city
Family status: Widow. Her children and grandchildren regularly visit her during the school holidays
Health status: Since a minor fall a few months ago, Yvette feels less comfortable going out
Main health issues: To maintain her independence with respect to daily living and going out



Through the social housing provider, Yvette and her relatives became aware of regular **home visit programmes for elderly people.**

Yvette is visited twice a week by the postman, who makes sure she is well. Initially sceptical and reluctant to have a stranger visit her home, Yvette now enjoys this ritual and her family is reassured.

A community canteen has just opened in Yvette's neighbourhood. Created to tackle social isolation, the goal of the canteen is to enable residents to meet up and take part in the organisation of meals: cooking, setting the table, clearing away place settings, washing up, etc.





Yvette plans to try out the concept soon. Passionate about cooking, she hopes to learn new recipes and share her own tips, especially with the younger generation.

Xavier's neighbourhood has a community café. This social and solidarity-based economy company notably works with hospitals to help people in difficulty return to a normal social life.

Xavier has made this place his safe haven and goes there when he feels stressed. He has recently tried to incorporate certain plants recommended for their soothing or melancholy dissipation properties into his diet.



A therapeutic garden has just been opened near Xavier's home. Made up of several theme-based planting areas (calm and sleep, immune system, digestion, blood circulation, etc.), it also includes information panels explaining how to recognise the different plants and their medicinal properties.





Xavier Gaillard
40 years old
Executive on long-term sick leave

Place of residence: Private individual housing in the centre of a medium-sized city
Family status: Divorced
Health status: Following his divorce and difficulties at work, François experienced an episode of severe depression. After full-time hospitalisation, he is now under outpatient care
Main health issues: To recover from depression and resume a normal life



Encouraged by his therapist to resume a physical activity and appreciative of the City's pedestrianisation work, **Xavier plans to walk more to take care of his daily needs (medical appointments, shopping, etc.)**

Xavier visited the café to meet the volunteers and residents. He liked the friendly atmosphere. **He plans to return to take part in activities and resume a more normal social life.**

The City has implemented a vast programme to encourage walking in the city. Dedicated signage, pedestrian strolls with visual and sound environments, development that takes natural paths into account, etc.





The city recently prohibited car parking in front of Lola's school to limit noise and pollution.

Since then, Lola's father has decided to stop dropping her off by car. He and Lola now use their bicycles and are trying out the new cycle path made of ecological plant-based asphalt.

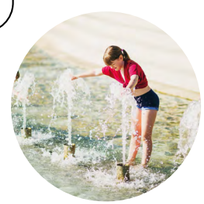


Lola Moreau
9 years old
Schoolgirl

Place of residence: Private collective housing in the centre of a major metropolis
Health status: Lola is in good health but is being treated for her dust mite allergies
Main health issues: To maintain good health by acting on health determinants (environmental and psycho-social factors, etc.)



Lola's school has undergone work to remove concrete and green the playground: evapotranspiration surfaces, green walls, plant tubs, shade houses, etc.



Lola and her friends have taken to this new playground, which is poles apart from traditional standardised squares. Initially worried about the safety of their children and the risk of accidents, parents have been won over too: **Lola now spends more time outside, playing and exercising.**

During heat waves in summer, the space is transformed into an oasis of urban coolness that is open to everyone. Lola's entire family spends time here and particularly enjoys the misters and water fountains turned on for the occasion.

An adventure playground has just been inaugurated in the neighbourhood. With their dizzying wooden slopes, their foam blocks to constantly reinvent new settings, and their hammers, saws, nails and paint available to build wooden towers, these bold playgrounds encourage children to test their limits and make up stories.





The City has just published a "Disability, inclusion and universal accessibility" strategy, which sets out a series of actions to be carried out to benefit citizens with disabilities.

Laura is delighted with this initiative, especially as she is an activist for raising public awareness of the difficulties linked to disabilities in cities. In addition to her involvement in community-based groups, she regularly takes part in consultation and participation programmes organised by the city. She has already submitted disability-related projects within the framework of the participatory budget.



Laura Nguyen
33 years old
Employee

Place of residence: Collective social housing in a priority neighbourhood in a metropolis
Family status: Divorced
Health status: Laura became a paraplegic 10 years ago following a climbing accident. She regularly goes to hospital for medical examinations
Main health issues: To reconcile life in the city and her disability and to continue her high-level sporting activity

A traffic calming area has just been developed near Laura's home in response to various conflicts over the use of roads. In this area, which gives priority to pedestrians, vehicle speed is limited to 10 km/h, pedestrians are allowed to use the roads and have priority, and cyclists are authorised to travel in both directions on the roads.



Laura appreciates this new development, which enables her to easily use her wheelchair on bicycle sections. **She would like to see this type of programme extended to other areas.**



The neighbourhood has a sport and fitness trail developed for visually impaired people, people with reduced mobility and able-bodied people: raised-dot information panels for tactile reading, wheelchair-accessible surfaces and apparatus, etc.

Laura trains there daily to maintain her physical and muscular fitness in preparation for her upcoming sitting volleyball matches.

When Ousmane was discharged from hospital after his myocardial infarction, he was referred to his city's healthcare centre for long term post-infarction monitoring.



Ousmane and his family have become members, which is a way for them to improve the balance of their diet, an element that is essential to Ousmane's health. Ousmane regularly participates in the distribution of baskets to other members.



In conjunction with a farmer converting to organic practices, an AMAP (Association for the Preservation of Peasant Agriculture) has just been created in the city. A one-year contract has been signed with the producer for the weekly delivery of fresh fruit and vegetables to members.



Ousmane Mwana
55 yeras
Tradesman

Place of residence: Collective social housing in a small town
Family status: Married with two children
Health status: Ousmane suffered a myocardial infarction two years ago. His condition is now stabilised
Main health issues: To adapt his lifestyle and care pathways to prevent the risk of heart failure related to his medical history

As part of this programme, Ousmane's doctor prescribed regular moderate physical activity. During an initial appointment, a sports educator guided him towards a physical activity adapted to his pathology. Since then, Ousmane has been meeting him regularly to inform him of his progress.

Ousmane sees a general practitioner there every three months and a cardiologist once a year. As part of the therapeutic education programme provided by the healthcare centre, he has participated in group sessions on various themes (cardiovascular risk factors, nutrition, physical activity, self-monitoring, etc.)

The City has set up a prescription-based sport and fitness programme to encourage the practice of regular, moderate physical activity adapted to the health status of chronically ill patients.



CREATING ENVIRONMENTS CONDUCIVE **TO HEALTH AND WELL-BEING**



Claude Rolland

Healthcare department director of Bouygues Construction

As we have just seen, our population is changing. There are more elderly people, but chronic illnesses, mobility difficulties and even disabilities can affect all of us.

Long-term illnesses (LTIs) affect 20% of our population but account for 75% of our health expenditure. Since the treatment and monitoring of these LTIs rarely require a technical hospital platform but always require local multidisciplinary care with doctors, nurses and paramedics, we must reinvent our health model to enable easier access to care and develop proper prevention. Medicine has made great strides to provide more and better care, but today, poor lifestyle, pollution and lack of physical activity are increasing the number of LTIs and preventing an increase in healthy life expectancy.

As a builder and property developer, we have a responsibility to provide new and innovative solutions to improve the quality of life of the people who will live or work in the buildings and neighbourhoods we deliver.
For construction, we have long since reduced the inconveniences caused by construction sites and favoured non-polluting materials and we are now developing the use of wood and low carbon concrete in our projects. However, above all, we wish to develop projects where nature resumes its rightful role, where services are close at hand and where people want to walk around, connect with their neighbours and participate in neighbourhood meetings on health prevention or mutual assistance to benefit people in difficulty.

Because our needs evolve over the years, we are developing projects where flexibility and scalability are incorporated from the outset.

Better living means learning to enjoy the air, water and land that surrounds us. It means talking to each other, and helping those around us. We are working to create such places where life will be better.

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March 2020



COVID-19 Supplement

july 2020

THE TERRITORIES DEALING WITH THE **HEALTH CRISIS**

#8

COVID-19 Supplement

July 2020





WHAT ARE THE IMPACTS OF **COVID-19** ON CITIES AND TERRITORIES?

Sudden economic shutdown, cities providing a minimum service reduced to vital functions, large scale quarantine to the home: the crisis due to the COVID-19 epidemic revealed both the resources and the vulnerabilities of the cities four billion people worldwide found themselves confined in April 2020. This forced pause caused a re-examination of our urban lifestyles in terms of our relationship with time, space and the essential.

For many elected representatives, philosophers, sociologists, geographers, town planners and architects, the crisis appears to have been a tremendous opportunity to reinvent the model of the city that is more favourable to the environment and human beings. What lessons can be taken from this crisis if we are faced with a situation that could recur in the decades to come, where the coronavirus served as a “dress rehearsal, a crash test for human societies”, according to Edouard Bard, a professor at the Collège de France.

This essay will first analyse the **vulnerabilities** and **resources** revealed by the crisis, from a regional point of view. New **uses** linked to the crisis will then be explored, including incorporation in development projects and real estate products, before concluding with the impact on urban **models** and how urban environments operate.

Vulnerabilities

The global imbalance of ecosystems increases our vulnerabilities to the risk of animal pandemics and, in the future, the decline of biodiversity

Appearing in China at the end of 2019 in circumstances that are still unknown (but probably linked to an animal vector), the SARS-Cov-2 coronavirus joins a long line of viruses that come into contact with humans as a result of pressures on the environment. Global warming, deforestation, agricultural expansion and the increase of urbanisation accentuate the human-animal interface. The distribution ranges of pathogen-carrying mosquitoes are expanding and contact with natural reservoirs of pathogens is increasing, multiplying the risk of animal pandemic.

The emergence of this virus validates the new approach of the health policies created in the 2000s by the OIE (Word Organisation for Animal Health) and taken up by the FAO (Food and Agriculture Organization of the United Nations) and the WHO (World Health Organization), which takes into account the **links and interdependencies between human health, animal health and ecosystem health: «One Health».**

Our current models of growth and development are fuelling our own vulnerabilities and this crisis reminds us of the urgent need to return to a global balance of ecosystems. Today, we are affected by the risks associated with animal components, but tomorrow we will face the even greater threat of the decline in biodiversity, which directly affects our food security. More than ever before, our regional development models must control urban sprawl and fight soil artificialisation.



A global approach through the determining factors of health, and its regional interpretation, are necessary to reduce vulnerabilities to the virus

Worrying epidemiological assessments carried out daily by the national public health agencies reveal profiles vulnerable to the virus.

At the end of May 2020, according to figures from Santé Publique France, **77% of patients admitted to intensive care units had at least one comorbidity.** Among the aggravating pathologies of patients in intensive care, obesity, diabetes, cardiac pathologies and pulmonary pathologies were the most common.

This established link between chronic diseases and vulnerability to infectious epidemics confirms the need to address the risk factors largely rooted in our lifestyles and consumption patterns (alcohol or tabacco consumption, intense pace of life, diet and the quality of our living environments). Urban concentration, in particular, isa source of high exposure to risk factors due to settings that may favour sedentary lifestyles and intense paces of life as well as continuous exposure to pollution.

Althouth a causal link has not yet been scientifically demonstrated, several studies question the correlation between air pollution and mortality related to COVID-19.



77 %

of patients admitted to intensive care units had at least one comorbidity

Santé Publique France
May 2020

“We have not paid attention to antibiotic resistance, nor to the links between environment and health, still less to the inequalities in access to healthcare and life expectancy that persist and are even increasing. We must now both accelerate the adaptation of the health system to the treat and monitor chronic diseases and create the conditions to deal with the significant and deadly epidemics that are likely to recur”

Gaby Bonnant and Etienne Caniard,
Health specialists Gaby Bonnant and Etienne Caniard (respectively, former president of Unedic and member of the High Council for the Future of Health Insurance, and former president of Mutualité Française and a member of the National Authority for Health) in an opinion column in “Le Monde”

COVID-19 and pollution

A study by Yaron Ogen, a researcher at Martin Luther University Halle-Wittenberg, conducted across 66 regions in Italy, France and Germany, showed

that 78% of COVID-19 related deaths were in regions with the highest concentrations of NO2 (nitrogen dioxide), combined with a downwards airflow that prevented effective dispersion of air pollution.

Long-term exposure to this pollutant could thus be a factor in mortality due to COVID-19 in these regions.





These initial analyses confirm the importance of a comprehensive approach to health and the related determining factors in addition to individual biological characteristics, many behavioural, environmental and socio-cultural factors intertwine to determine our health status. The case of Seine-Saint-Denis, a department heavily affected by the COVID-19 epidemic, is particularly striking.

According to a computer graphic produced by Le Monde based on data from INSEE and the Ile-de-France regional health observatory, excess mortality jumped by nearly 130% between 1 March and 27 April 2020, compared to the same period in 2019, an increase twice as high as in other departments in the greater Paris region (+67% in Yvelines and +65% in Seine-et-Marne). This is due to the economic, health and social inequalities in the department: job insecurity and poverty, medical deserts, co-morbidities and overcrowding in the home.

There are other, more latent inequalities in addition to those related to the virus itself, linked to quarantine measures, whose effects will become apparent in the longer term. The experience of the two months of distance learning risks deepening educational inequalities, especially for students who didn’t have access to computer equipment to follow online courses, who did not have a large or quiet enough space to concentrate and children whose parents were not able to assist them.

More than ever, the epidemic is confirming the need to combine a comprehensive approach to health via determining factors and a health system capable of preventing and managing the development of chronic diseases on the one hand and, on the other, of responding rapidly and proportionately to an infectious epidemic.

Economic, social and health inequalities in Seine-Saint-Denis
Housing conditions:

Average surface area per person

18 sqm

in a quarter of homes in Seine-Saint-Denis

25 sqm

in Paris

Percentage of households containing three or more persons

42 %

in Seine-Saint-Denis

22 %

in Paris

• Seine-Saint-Denis is the department with the highest number of people over 65 years old suffering from pathologies such as diabetes and chronic respiratory diseases.

• The department has a large number of key workers working in the essential sectors that are most exposed to contact with the public: hospital workers, cashiers, salespeople, delivery personnel, care assistants.

Strategic relocations are needed to reduce dependence on globalised supply chains

The abrupt deceleration of the economy due to quarantine and border closures has highlighted the limits of, and vulnerabilities to, widespread global interconnectedness.

Shortages of protective equipment, in particular, have revealed the drawbacks of deindustrialisation and the levels of overdependence on globalised supply chains (surgical masks, respirators, gowns, etc.), leaving healthcare workers and front-line workers dangerously ill-equipped during peak periods of the epidemic.

Likewise, uncertainties over food availability, which have triggered panic and mobbing in supermarkets, have highlighted the fragilities caused by a globalised food market. While there is *"enough food in the world to feed everyone"*, according to Qu Dongyu, Director-General of the Food and Agriculture Organization of the United Nations (FAO) in an opinion column in *"Le Monde"*. *"we still need to ensure that food is available where it is needed."* And that's exactly the problem. The long value chains of the globalised economy have moved production sites and consumption locations apart and multiplied logistics requirements. Individual behaviours and national policy decisions such as restaurant closures or restrictive trade or supply chain measures to ensure national food security have global implications.

In 2017, a report by Utopies on the food autonomy of cities warned of the low food resilience of the regions in France.

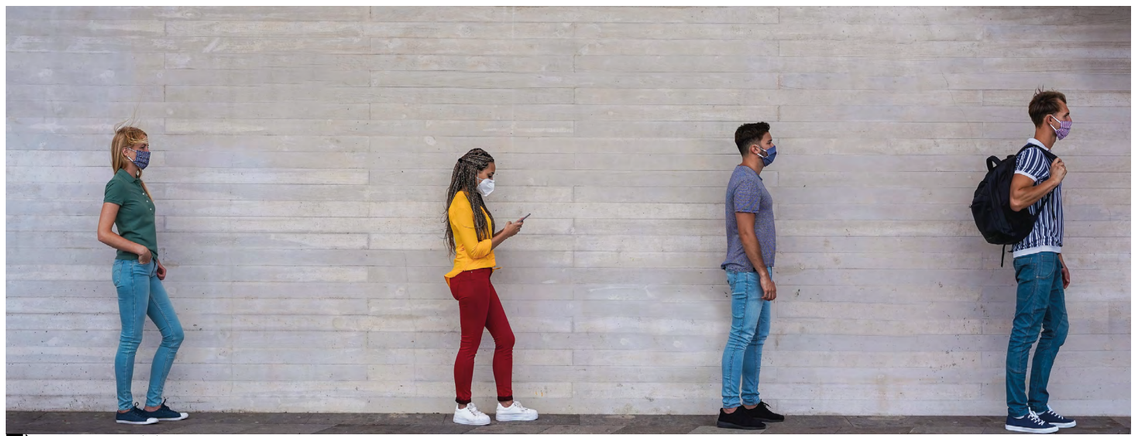
Movements to re-regionalise food were under way before the COVID-19 crisis, as demonstrated, for example, by the City of Albi aiming to improve its food autonomy by 2014 and the Dijon metropolitan food project (see p.55 Trendbook #8). **By accelerating awareness of the fragilities of a globalised system, the COVID-19 crisis should amplify movements of food re-regionalisation.**

More generally, movements to reconfigure real economies are expected, with a return to regional value chains and relocation of strategic industries (pharmaceuticals, electronics, telecoms, etc.). Following the end of quarantine in June 2020, the French government announced its intention to control the entire paracetamol production chain on national soil within three years.

The food autonomy of cities warned of the low food resilience of the regions in France

Of the 100 urban areas studied, only 8 exceeded the 5% autonomy threshold.

This is due to the inconsistency of a system that is not very regionalised, where 98% of food **is "imported" agricultural products, while at the same time** 97% of local agricultural **products are exported.**



Urban density: an aggravating force or resilience in the face of the epidemic?

The notion of density has largely fuelled debates during the crisis: does a dense city encourage transmission of the virus? Intuitively, it would be tempting to answer yes to this question because of the higher likelihood of interpersonal contact.

However, the positive correlation between density and infection rate is far from obvious. An analysis conducted by the World Bank on 284 Chinese cities[1] even shows the opposite. The correlation between the number of confirmed coronavirus cases per 10,000 inhabitants and population density in each of the regions revealed higher relative infection rates in lower-density regions than in Shanghai, Beijing or Shenzhen. Rather than population density, distance and economic links to the epicentres of the epidemic (Wuhan) would appear to explain the highest rates.

The ability to enforce quarantine and physical distancing measures therefore appear to be more decisive than population density in the spread of the virus. However, large and dense cities benefit from advantages linked to economies of scale and an increased capacity to react: high level services facilitating stay-at-home orders (broadband connections, home deliveries), quality and size of care infrastructure, capacity to maintain and reorganise essential urban services (water, sanitation, energy, waste, transport), capacity to organise local community networks. Could one go so far as to say that a dense city would be more resilient in the face of the epidemic? However, once again we are confronted with the notion of inequalities: although the risks linked to density can be controlled, overcrowding within the home and the concentration of front-line workers exposed to the virus in an area (cf. Seine-Saint-Denis p.5) are, in fact, factors that encourage transmission.

[1] Source : https://blogs.worldbank.org/sustainablecities/urban-density-not-enemy-coronavirus-fight-evidence-china



Resources

Local authorities have shown resilience in their management of the crisis

The crisis was a test of resilience for the regions and an opportunity to test their ability to respond to the impact.

Although the latter was brutal, the response was reactive and the evolution of the crisis eventually defused initial fears and even panic caused by the risk of overrunning hospital structures and disruptions in the supply of food and basic necessities. The crisis even brought to light a number of assets that regions, particularly urban regions, have been able to bring to bear in managing the crisis.

The regions were key players in the management of the crisis, both during the period of quarantine and at the time of the end of quarantine. In many cities, operational crisis units have been set up to manage the current crisis and to anticipate a potential overlap of crises (e.g.: power supply disruptions, exercise of the right of withdrawal of truck drivers), as Célia Blauel, Deputy Mayor of Paris in charge of Paris 2030 outlook and resilience, told us[1].

[1] Source : https://www.bouygues-construction.com/blog/fr/dossier-special/COVID-19-impacts-confinement/#que-nous-a-appris-la-crise-du-COVID-19-sur-la-resilience-des-territoires





Examples of regional responses in crisis management

During quarantine:

- **provided** essential services to the population (water, sanitation, energy, waste, municipal police)
- **organised** solidarity networks (food aid for certain families, help for the homeless, childcare for care workers, social links with isolated vulnerable people, various re-housing needs)
- **provided** the population with protective equipment (mask making).

At the end of quarantine:

- **helped** shopkeepers and artisans who were particularly hard hit by the crisis (temporary occupation of terraces on public walkways for cafés and restaurants, structuring of short circuit local economy)
- **implemented measures** for social distancing in public spaces (creation temporary of bicycle paths)
- **ensured** the resumption of school.

The regional response also relies on social agility and the capacity of stakeholders to initiate new collective dynamics

According to Stéphane Cordobes, an associate researcher at École Urbaine de Lyon (interviewed on this subject), aside from greater involvement by local authorities and elected representatives in the management of the crisis, the intelligence of regions also relies on the horizontal involvement of civil society, local elected representatives and experts, as well as local economic stakeholders, supported by State aid.

The response to this extraordinary time in history came from the ability of cities to manage and reorganise essential functions and services, of all stakeholders to work together with social agility on a common objective and to continue to “function as a society” (socialising via windows or balconies, for example).

One of the challenges ahead will be the ability to enhance and consolidate the solidarity unveiled by the crisis. This is one of the objectives of Mission Résonance, initiated by the Tours Urban Planning Agency following the crisis. By questioning local stakeholders from all walks of life on their perceptions and proposals, the Agency intends to identify the networks and often unprecedented forms of cooperation that were created at the height of the crisis in order to support these initiatives and make them sustainable. While the period of quarantine was not very conducive to “living together”, it was, on the other hand, a breeding ground for “doing together”, which is promising for the future.



Example of an initiative

Many initiatives have emerged during the health crisis, demonstrating the responsiveness of civil society and its ability to initiate transformations to support resilience.

This is the case of the call for the creation of a Metropolitan Interest Market (MIM) launched by stakeholders from Lyon’s civil society. This market would take the form of a cooperative society of collective interest in which local authorities, sustainable food stakeholders, producers and consumers would join forces to increase Greater Lyon’s food autonomy and support the emergence of a sustainable territorial food system.

> The collectives and networks that are created or unveiled when dealing with emergencies are in effect processes of regionalisation in their own right. They will be beneficial not just to deal with the current crisis, but also to influence how we build the future, if we manage to maintain or even intensify these dynamics. This involvement could also play a role in the future, which is a far more promising prospect than the other, more worrying trend that has also manifested during the crisis, that of withdrawal, in the forms of borders, video-surveillance and control, to name a few. In my opinion, the real intelligence of the regions lies more in these collective dynamics than in the influence of techno-powers. After all, that is basically what ‘creating regions’ is all about.
>
> **Stéphane Cordobes,**
> *Associate researcher at École Urbaine de Lyon*

Usage

The quarantine measures taken in the face of the pandemic may have varied in severity by country, but they have undeniably changed our habits and lifestyles as never before. Will this impact result in the emergence, spread or revolutionisation of certain uses?

Improving the experience of essential uses and simplifying everyday life

Mobility reduced to local and essential travel, 23/24 hours a day at home: the period of quarantine has changed the relationship to time and space for a large part of the population. This reduced space we have been forced to live in is contrary to our nature as beings of movement and has encouraged a great level of introspection into our ways of living.

In this context, dissatisfaction related to cramped or inadequate housing, limited access to nature or lack of outdoor space has been exacerbated. It has made the need for quality housing and the resolution of tensions between density and quality of life glaring.

Aside from comfort and the living environment, the use value of housing has fuelled debate in the context of increased hybridisation of uses of the home: remote working, distance learning, remote medical consultations, exercise, home-production (food, energy, crafts) or transformation (cooking, DIY), etc. Good connectivity, the ability to modulate or reorganize spaces for these different uses, and even the option to achieve a degree of autonomy played a crucial role in the experience of this period.

These needs are expected to continue and increase, particularly those related to the growth of "remote" activities, which is undoubtedly one of the major trends associated with the period of quarantine. A key factor in maintaining work activities, digital tools have passed the test of the crisis and proved effective for different uses (work, learning, consumption, healthcare). A change of scale has taken place thanks to new converts and accelerated appropriation of these tools. Beyond the period of the crisis, these tools should continue to be attractive because of the alternative they represent in the face of commuting and the option they offer to bring together a community.

How can the growth of these new remote working practices be embodied in development projects and real estate products? It has already been noted that certain sectors will grow, such as logistics (whose role has exploded during the crisis), to the extent that operators are now advocating classification of the food supply chain as a vital operator.

The environmental issues related to the development of logistics systems will be all the more crucial. Efforts will focus on bringing logistics platforms closer to consumption locations, which should strengthen the real estate offer provided by new urban logistics spaces (urban distribution spaces, urban delivery spaces, urban distribution platforms).



[1] Source : BNP Paribas survey, April 2020

Criteria for assessing a dwelling deemed more important as a result of quarantine[1]

Balconies, terraces, gardens, criterion no.1 for

66 % of respondents

cited by

81 % of respondents

The fate of the tertiary sector is more uncertain. The experience of widespread remote working (for professions suitable for this type of work) will likely have a profound effect on future patterns of use of tertiary real estate. The spread of remote working and the adoption of new collaborative technologies that have proven effective could reduce office occupancy rates and at the same time reinforce the need for head offices that "showcase" the company's values and are capable of uniting employees: the office will have to demonstrate added value in terms of image, performance and attractiveness. Companies could opt for more flexibility, adapting to the workplace as a service and diversifying their real estate positions in favour of coworking.

Slowing down

The period of quarantine meant a significant restriction of freedoms due to limitations on travel, consumption and meetups. While part of the population found this extremely difficult, some saw this period where time seemed "suspended" as an opportunity to take a break, to focus on themselves and to slow down the pace of our modern lives. The leisure or everyday activities that marked this period (cooking, DIY, gardening, sorting, tidying up, cleaning, reading, watching videos, checking in with family and friends, etc.) have nourished a form of psychological resilience in the face of the crisis, and have even been a source of well-being for some.

According to the "COVID-19: Le Jour d'après" (The next day) survey carried out by Obsoco during quarantine, 56% of the French people surveyed believed that their habits would change once the pandemic passed. While the long-term impact on usage is difficult to predict, reactions during the crisis and the changes in practice point to possible directions. This is the case for commuting, which underwent numerous upheavals and reversals during the different period of the crisis:

- **During the period of quarantine:** car traffic reduced to vital functions, public transport "reserved" for front-line workers and exercise reduced to a one-hour walk a day for most of the population.

- **At the end of quarantine:** wide-scale continuation of remote practices (due to remote working in particular), distrust of public transport, fear of an increase in the use of private cars for health and safety reasons, development of active modes of transport (walking, cycling, scooters, etc.) supported by the development of dedicated temporary infrastructures and bicycle purchase subsidies from local authorities and the government.

While it is likely that the health crisis will change movement patterns (towards more remote activities, active modes of transport and perhaps more private cars) rather than revolutionise them, the experience of quarantine has above all argued in favour of a decrease in mobility: made possible by the maturity of remote practices and more free time, it is one of the responses to the growing aspiration for a slower pace of life.

The rise of remote practices has also favoured another major trend observed during quarantine: a massive urban exodus where 1.2 million Ile-de-France residents left for the other regions of France. While this may have been seen as the beginning of a demographic rebalancing of the regions, the realities observed at the end of quarantine are less clear-cut. According to initial figures from estate agencies, intentions to buy second homes or pursue "lifestyle changes" as observed by the increase in visitors have so far not been translated into action, and residents of large conurbations are more likely to look in smaller towns than in the countryside or the coast.

The rise of "remote" activities

Virtual consultations billed to Assurance Maladie

- **486,000** during the first week of quarantine
- **10, 000** per week prior to quarantine

74 % of GPs expect to continue using virtual consultations after the epidemic[1]

19 % of French people have bought a new category of products online during quarantine[2]

In Chine, 89 % of consumers now want to make more frequent online purchases of fresh and basic necessities[3]

Intentions to work remotely in the future[4]:

	"Experienced" remote workers	New remote workers
On an ad hoc basis	39 %	52 %
On a regular basis	59 %	28 %
No remote work	2 %	20 %

[1] Source: Doctolib
[2] Source: YouGov for Keley Consulting
[3] Source: Nielsen
[4] Source : Source: Anact (National Agency for the Improvement of Working Conditions), June 2020

Producing and consuming locally

Local workshops for fabric masks, local purchases, purchases of short chain products encouraging small producers: during the period of quarantine, the local economy was centre-stage in production and consumption.

The “Manger au temps du coronavirus” (“Eating patterns in the period of coronavirus”) survey conducted by Terralim and the research units of Agrocampus Ouest showed that demand was up to ten times higher than supply, particularly for fresh produce. According to Yuna Chiffoleau, a researcher at the national research institute for agriculture, food and the environment (INRAE) in Montpellier, interviewed by Ouest France, the success of short chains was down to several factors:

- **Consumers** need transparency and reassurance about the origin of products and the supply chain
- **Solidarity** with local producers affected by the closure of restaurants, school canteens and markets
- **A desire** to use fresh and varied produce with a view to healthy eating.

According to a survey carried out for Engie Solutions on the end of the crisis, 60% of French people want to change their consumption habits by favouring local purchases and short chains. While sales fell after the end of quarantine, initial feedback from producers shows higher overall levels than before the crisis, indicating that short circuits were not just a simple fallback solution to avoid the large supermarkets. Community-supported agriculture, farmer shops, farmer “Drives”, online ordering and food markets have a bright future ahead. We still have to find a solution for a short-chain logistics model to keep pace with growing demand while controlling the carbon impact.





Models

The cities we know today were partly forged by the fight against infectious disease epidemics. After the cholera epidemic of 1832, which claimed 19,000 victims in a few months in Paris, the 1850 law on substandard housing introduced new systems (wider windows) to let in light and allow better air circulation. This crossover between medical hygiene advice and town planning reached its apogee with the great Haussmann project:

- **Wide avenues and city blocks with courtyards for ventilation and air circulation in the city**
- **Parks and green spaces to provide oxygen**
- **Water supply and sewerage networks to clean up the city.**

Far from this hygienic vision, the health crisis linked to COVID-19 is an opportunity to re-examine our urban models, our objectives and the tools we have at our disposal to implement them.

A resilient and liveable city

The key concept of resilience emerged during this period. Already present in the thinking of certain cities before the crisis (e.g. Paris), it now concerns all regions. The city must be resilient, capable of reacting to any type of crisis or shock and to overcome them in a sustainable way by restoring a balance. Re-examining the city from the point of view of resilience leads to new modes of governance and action: cross-functional strategies to adapt to the challenges of our era (in particular adapting the city to climate change), exploitation of collective intelligence and inhabitants as stakeholders for resilience Improved regional cooperation and re-regionalisation (to secure water, energy and food supplies), a culture of crisis management with particular attention to sensitive and vulnerable people, etc.

The massive urban exodus during the period of quarantine was an undeniable reminder of the disadvantages of the dense city, as Célia Blauel put it: *“It was not a feeling of insecurity that drove some residents to leave Paris, but the closure of terraces, restaurants, cinemas, theatres, etc. Once these places are closed, the capital’s weak points are obvious: too much concrete, lack of green spaces, lack of communal spaces.”*

Nature in the city, the development of soft mobility and the reduction of the role of cars, the development of agriculture and urban agro-ecology (integration of all environmentally-friendly production techniques into the urban landscape), solidarity and local uses: these ingredients in the liveable, peaceful city were already at the heart of urban policies before the health crisis. They will remain the driving force of future urban transformations, but could benefit from a new approach based on the concept of health-friendly urban planning: how can these factors respond to the health issues of the population of a given region and form part of planning a neighbourhood, block or building?

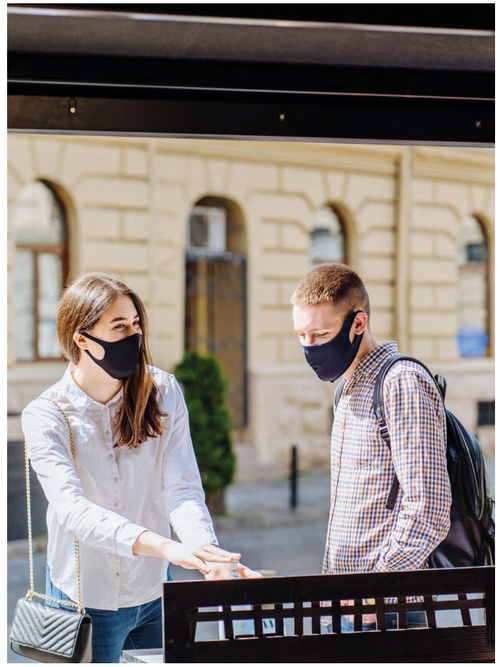


The advent of a temporal approach to town planning to ensure local balances

How can dense cities be adapted and make physical distancing possible at the end of quarantine? To overcome this challenge, cities have used agile urban actions that have proven effective in managing the crisis:

Action	Example
Tactical urban planning: temporary structures with easy-to-install parts to signpost changes in the layout of a street, intersection or public space and to direct user behaviour	• **Temporary bicycle paths** • **Removal of parking spaces** to widen footpaths for café and restaurant terraces or store entrances • **Temporary lowering of the speed limit** for traffic and sharing of the roadway in places with a high concentration of pedestrians and cyclists
Time-based urban planning: Modulation of the city's busy periods for decongestion	• **Imposition of time slots** limiting the duration of outings and sports practice • **Closure of streets to traffic** at certain times to allow the extension of restaurant terraces • **Flattening of peak hours** to avoid rush hours on public transport





The crisis brings a temporal approach to urban planning to the forefront. This approach was already seen to flourish in the past in the form of the "Bureaux des temps" or "Temps urbains" projects.

Whatever the concept (tactical, temporary, reversible, transitory, temporary, time-based), the objective is to observe uses in order to identify potential for intensification, deintensification or adaptation and to organise uses while paying attention to local balances. This approach has proved effective in times of crisis to support a rapid change in uses over a short period of time and is also relevant for longer time frames in urban or property-development projects. This approach will likely be essential to overcome the challenges ahead, particularly in reconciling density and quality of life. To be viable, this approach needs to be used to balance the habits of users and ensure local balances, rather than hyper-optimizing buildings and infrastructures.

Is the smart city emerging stronger from the health crisis?

While the crisis has generally reinforced existing or emerging urban models, it also seems to be fuelling existing divisions on certain concepts.

This is the case for the "smart city", in its technological sense, related more broadly to the use of data. While some praise the advantage of the smart city in crisis management (e.g. Dijon Métropole, which has added an additional toll-free number service available 24/7 to its centralised control centre. Residents can call about various issues, excluding medical emergencies. According to the service, the scheme facilitated coordination and reduced the need for staff to be sent out, reducing exposure to the virus). However, others point to mass surveillance and data management as an infringement of civil liberties and an invasion of privacy and are concerned about the spread of these schemes in the context of the health crisis.

In France, volumetric analysis of data through cooperation between Orange and Inserm (French National Institute for Health and Medical Research) to analyse population movements and the Stop COVID contact tracing app sparked the debate: the revelation by cryptography researchers that a much wider set of data was being collected than initially announced would appear to confirm the fears of detractors. Although we are still a long way from the mass-scale monitoring of infected people or those likely to be infected, as in South Korea or China, the health crisis could increase the appetite for tracking and video surveillance systems and bolster the dynamic of safe cities, which has already prevailed in some cities (Nice, Marseille, Saint-Etienne).

Regardless of the role of technology, the smart city will rely above all on the involvement of stakeholders and citizens, who demonstrated their ability to organise, provide care and show solidarity to tackle COVID-19 during the crisis.



Trend books

#1 Leisure and urban dynamics
#2 Move towards mutualisation in social housing
#3 Digital cities, human design
#4 Ageing well at home
#5 New campus models for a learning society
#6 Housing in the future
#7 Cities and Mobility, reinventing proximity
#8 Creating environments conducive to health and well-being

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