

A healthy city beyond cycling

A practical guide to building healthier cities



POSAD MAXWAN

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Reader's guide

Dear Reader,

This document means to share insights on the link between our health & wellbeing and the environments we live, work and play in. It aims to inspire the reader and spark action with a lot of practical examples. The document is build out of five main chapters. Each chapter discusses a different key ingredient of a healthy city.

The chapters are always divided in:

You can read the document in full if you wish or you can browse through it and just read the challenges, the health & wellbeing impact or the solutions in every chapter. Or just take a read through the intro's and infographics we've added to summarise the most important content.

We hope you will enjoy reading this white paper as much as we've enjoyed writing it.

Best regards,
The PosadMaxwan Team



Challenge

The challenge: What is happening today on this topics? What are some of the main challenges and how did we get here?



Health & Wellbeing

Solution: What is already happening today to provide a healthier living environment? Some practical examples from all over the world.



Solution

Health & Wellbeing: How do this topic or its challenges relate to our physical and mental health & wellbeing?



Well-being as a cornerstone of city building

A climate action plan, a mobility plan, a smart city plan – the modern city has a plan for every transition. But does it have a health and well-being plan that integrates all the others? Who is monitoring things to make sure all these plans actually lead to a healthier, more livable environment?

Today, urban design and development too often still focus on infrastructural and technological solutions. There exists a chance that we will evolve towards high-tech, climate-adapted cities inhabited by a lot of unhealthy and unhappy people. If we do, what exactly will we have gained?



Looking at modern city building, we seem to forget that we're building cities for people. We forget that efficient mobility and economic growth aren't the ultimate goals. The true heart of a city, ancient or modern, is the well-being of each of its inhabitants. In recent decades, we seem to have lost that focus. So how can we get it back?

Luckily, it isn't all gloom and doom. Things seem to be changing for the better. Paris is actively working toward becoming a "15-minute city" where every citizen can meet all their basic needs within a 15-minute walk or bike ride from home. That means easy access to healthy food, education and jobs

but also to culture and green space. With its new "superblocks" mobility plan, Barcelona hopes to create car-free neighborhoods with more space for people and nature. Amsterdam has pledged to phase out much of its streetside parking to achieve the same goal. Danish architect Jan Gehl's ideas on how to rebuild cities with people in mind seem to be seeping into many different aspects of urban development. Mobility, especially walking and cycling, sounds like the most compelling starting point for cities looking to create a healthier living environment. And it's a great place to start indeed. However, the task doesn't end there.

"Mobility, especially walking and cycling, sounds like the most compelling starting point for cities looking to create a healthier living environment. And it's a great place to start indeed. However, the task doesn't end there."



Intro

The COVID-19 pandemic has definitely sharpened the world's focus on healthy cities and accelerated many discussions and developments. Hundreds of kilometers of walking and cycling infrastructure have been created practically overnight. However, the pandemic has also shown us the dangers of the exponential increase in chronic conditions.

As we begin to understand the relationship between the two better, we will be able to address it. We aren't just talking about air and noise pollution but also things like access to affordable living, healthy food and shorter commute times. All of these have an impact on people's health and well-being.

So how do we build healthier cities and regions? How can we make urban development revolve around the well-being of a city's people again? Besides the prioritization of a safe, ample walking and cycling infrastructure, a few other key ingredients have a huge impact on the healthiness of a city.

Some of the most important are:

- child-friendly design
- proximity of services and people
- access to affordable healthy food
- high-quality green and blue spaces
- affordable housing.

“How do we build healthier cities and regions?”

In the Netherlands, one in two people suffers from at least one chronic illness. Diabetes, cardiovascular disease and depression, as well as loneliness, continue to rise. Preventive campaigns and medical solutions alone aren't sufficient, because these “lifestyle diseases” aren't caused just by a genetic predisposition or people's behavior. They're also heavily influenced by the environments we live, work and play in.

Life expectancy, and especially the number of healthy years, can differ strongly depending on where we live and our socio-economic status.

“How can we make urban development revolve around the well-being of a city's people again?”



In this guide, we'll explore the challenges, health impact and practical solutions for each of these key ingredients. Above all, though, building a healthier city starts with asking the right questions. Not “Do we have enough playgrounds?” but “Does our city

allow children of all ages to roam around freely and safely?” And with any project or decision, the most important question we should ask ourselves is “How will this improve health and well-being for all citizens?”

Child-friendly cities

Many children around the world grow up in small, crowded apartments with little or no outdoor space. When they do get outside, there is very little room for them to safely play and meet other children. This is the unfortunate result of many different trends, along with [the myth that families don't live in cities](#), which influence how we design and build our cities. Lacking places to play, safe travel routes, good schools or affordable housing, our cities have not been designed with children's healthy development in mind.





What makes a city childfriendly?

There are a number of key ingredients that shape a child-friendly city.

Let's take a look at some of the most important ones.

Child-friendly cities start with adequate affordable housing. For example, [San Francisco has the lowest percentage of children under 18](#) of any large American city. That's not surprising, since it has one of the most unaffordable housing markets, even for small units, so imagine if you needed a two- or three-bedroom home.

If a family does find a home it can afford in the right city, it's important that all the necessary caregiver support services, like schools, day care, health care and parent programs, are available within walking or cycling distance, or at least that there's easy access to good public transit options that allow people to get around, even with a stroller during rush hour.



Walkability and proximity

are also key factors in creating public spaces that are accessible and safe for children. Playgrounds are a great start, but it's important that children are able to safely walk to them from home, just as they need to be able to walk or cycle to school. However, we shouldn't reduce child-friendliness to playgrounds alone. They serve a limited age group, and there's a need for other types of public spaces too – for instance, places where teenagers can gather and areas where children of all ages can enjoy themselves.

“Playgrounds are a great start but it is also important for children to safely walk towards them from their home”

[The Crown Fountain in Chicago's Millennium Park](#) is a great example of a public space that wasn't designed for children specifically but facilitates interaction and play for all ages. Fostering community interaction in such places and through other initiatives, e.g. via local schools, is crucial for helping caregivers to feel connected and get to know and trust their community. It can help to combat social isolation and postnatal depression, as new parents feel less alone and families feel supported.

As we neglect to mix these key ingredients into our cities, suburbs and towns, these environments have an increasingly negative impact on children's development and health. A crisis like the COVID-19 pandemic only exacerbates these preexisting challenges.





Health & Wellbeing

How can urban design help children thrive?

The way we design cities, suburbs and towns has a significant impact on children's health and well-being. One of the better-known effects is asthma caused by air pollution. Lowering pollution, especially around school and in neighborhoods with lots of young children, can help prevent asthma. However, a city's health impact goes much further than air pollution.

Noise pollution, for example, creates harmful effects that are often overlooked. A German study found that kids who went to school near an airport performed worse than others and that their results significantly improved when they switched to a noise-free environment. This situation will also have important ramifications in the long run: those kids are starting life with a learning disadvantage due to their school's location.

When we design cities where children of all ages can be active and play freely and their caregivers feel comfortable letting them do so, the benefits are physical, social and emotional. The infographic below shows some perhaps less well-known examples.

It's not only children who benefit from healthy childhoods; they improve the economy overall. An often cited quote states that ["high quality early childhood programs can yield a \\$4-\\$9 dollar return per \\$1 invested."](#) This is true whether you're talking about an educational program or a spatial improvement in a city that allows children to benefit from informal development outside the classroom.

A city where children of all ages can live happy, healthy lives benefits the whole community. Adapting our cities for children of all ages will make neighborhoods and communities more resilient to future shock events, whether they're pandemics, heat-waves or floods. And we know there will be more of these in the future.

"A city where children of all ages can live a happy and healthy life will benefit the whole community."

THE IMPACT OF MOVEMENT AND PLAY ON CHILD DEVELOPMENT

"To grow up healthy, children need to sit less and play more"

<1 year



at least **30 minutes** in prone position (tummy time) spread throughout the day

1-4 years



at least **180 minutes** in a variety of types of physical activities at any intensity daily

5-17 years



at least **60 minutes** of moderate - to vigorous-intensity physical activity daily

Physical activity and outdoor play help young people to:

PHYSICAL

develop **neuromuscular awareness** (i.e. coordination and movement control)
World Health Organization

develop a healthy **cardiovascular system** (i.e. heart and lungs)
World Health Organization

build a strong **immune system** through contact with soil
Let Grow

develop healthy and strong **musculoskeletal tissue** (i.e. bones, muscles and joints)
World Health Organization

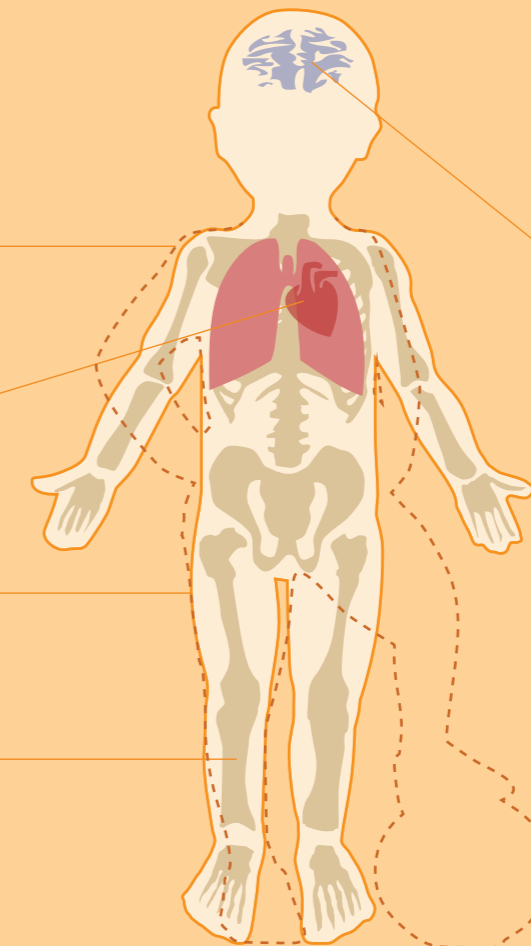
PSYCHOLOGICAL

develop social skills like **empathy, listening, and negotiating**
Harvard Graduate School of Education. Usable knowledge

lower stress levels, anxiety, and depression
World Health Organization

build **self-expression and confidence**
World Health Organization

enhance **creative thinking and other cognitive skills**
Harvard Graduate School of Education. Usable knowledge



"Children who don't get the chance to be outdoors and play freely for at least one hour a day, have a much higher chance of developing diabetes and obesity"
Child Health Centre, Auckland University of Technology

"Walking or cycling to the school in the morning can raise concentration levels for up to four hours."
Handbook of Positive Psychology in Schools, 2014



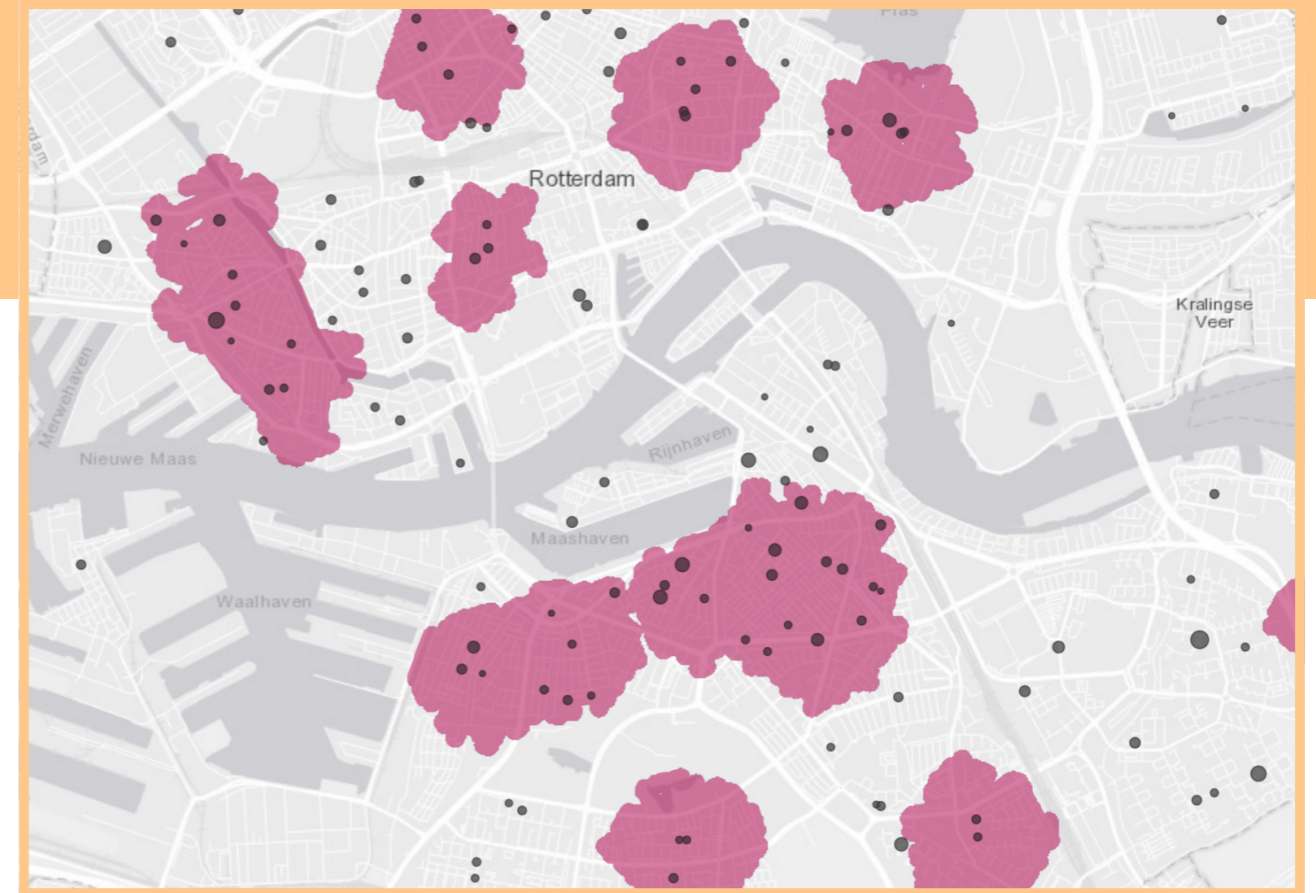
How can we create a child-friendly city?

There are many examples around the world of cities that are becoming more suitable for children. Strategies employed range from citywide restructuring to placemaking, from strategic interventions to changes in planning and policies.



Children priority zones in Bogota

Other cities, like [Bogotá](#), Colombia, have opted for more strategic interventions informed by data analysis. Bogotá created “children’s priority zones” focused around child care centers, playgrounds and health care clinics. Events were held beside these places to raise awareness and bring communities together around the priority zones. A range of interventions was proposed, each linked to the specificity of a place – safer road crossings near schools and parks, repurposing of unused spaces to create community gardens. Know-how gained in pilot projects was used to transform other neighborhoods in the city.



Walkable schools in Rotterdam

“Only half of Rotterdam’s primary schools can be considered walkable for children.”

Change can start with something as simple yet powerful as a map. In cooperation with A.Zine, PosadMaxwan made an [interactive map of Rotterdam](#) that visualizes how walkable the primary schools in the city actually are. The map takes into account factors such as a 10-minute maximum walking distance, road safety, sidewalk quality, and levels of activity and social control in a neighborhood. It turns out that only half of Rotterdam’s primary schools can be considered walkable for children. Now the city knows exactly where to take action and how.

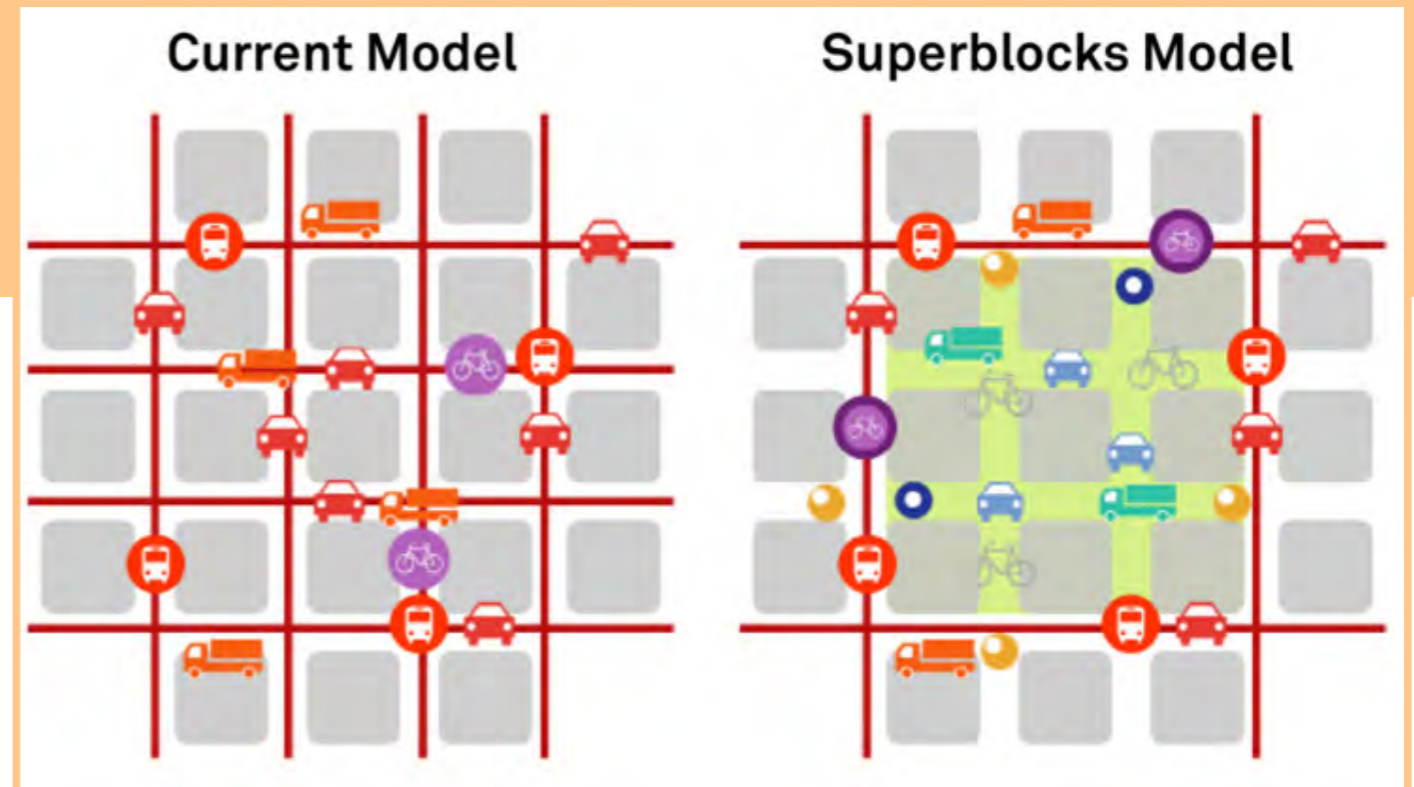


Solution

A city council for kids in Tirana

The city of Tirana, Albania, chose to give children a voice by creating a "city council for kids" where they could express their needs and dreams. Children have an overlooked power to drive behavioral changes in parents, such as switching from driving to cycling or walking, or even opting for healthy eating. However, for such behavioral shifts to take place, a city's infrastructure has to accommodate families' needs.

In Tirana, major urban expansion in the 1990s had resulted in a reduction in the amount of open space and more private ownership of children's facilities, which meant parents had to pay for their children to play locally. As Tirana reclaimed space for pedestrian and public use, created free public playgrounds and became greener through events such as monthly car-free days, city life started to shift from unaffordable, privatized and car-oriented to livable, green and lively.



- PUBLIC TRANSPORT NETWORK
- PRIVATE VEHICLE PASSING
- DUM PROXIMITY AREA
- BICYCLES MAIN NETWORK (BIKE LANE)
- RESIDENTS VEHICLES
- ACCESS CONTROL
- BICYCLES SIGNPOSTS (REVERSE DIRECTION)
- URBAN SERVICES AND EMERGENCY
- BASIC TRAFFIC NETWORK
- FREE PASSAGE OF BICYCLES
- DUM CARRIERS
- SINGLE PLATFORM (PEDESTRIANS PRIORITY)

Barcelona's city-wide restructuring

Barcelona has taken a tactical urbanism approach. With an ambitious vision of "superblocks," as invented by Salvador Rueda, the city embarked on a gradual city-wide structural transformation. The plan involved rethinking the traffic infrastructure in a part of the city made up of octagonal blocks. Each superblock consists of a three-by-three group of individual blocks.

Within it, streets do not have crossing traffic, surface parking is moved underground, and the speed limit is reduced to 10km/h. This creates space for greenery and communal activities, such as playing and socializing, in the public areas.

The restructuring project started with temporary tactical interventions, such as turning traffic crossings into neighborhood plazas with playgrounds, places for picnics, and space where families could meet or enjoy a drink from a local café. Later, these were replaced by permanent public space designs originating from the needs of the community.

Thanks to the superblocks, children gained safe places to play and were able to walk or cycle independently, and local residents got to know each other. All these benefits are known to improve children's and teenagers' physical and emotional development.

Child-friendly cities have a positive ripple effect.

All these cases have one thing in common: retrofitting our cities to suit the youngest residents creates more space for pedestrians, reduces noise and air pollution, strengthens green-blue networks and builds stronger communities. No matter what scale we work at, there's always a positive impact.

The result is an urban environment that's more resilient to shocks, whether environmental, economic or pandemic-related, all of which we might face more often in the future. Redesigning cities to accommodate children benefits the population as a whole because it sets a chain reaction in motion. Healthier children in healthier schools perform better and therefore have access to more opportunities later in life. And that means better lifestyles and cleaner, safer, healthier environments.

Designing cities for children allows us to raise healthy, resilient new generations that will have the opportunity to fully develop physically and emotionally while also being invited to boost their cognitive skills.

Proximity of services

Proximity means that during lockdown, when you're not allowed to leave your neighborhood or don't want to take public transit, you can still lead a good life, with access to everything you need. As many of us have experienced firsthand, it isn't available in a lot of neighborhoods today. Now that using mass transit is discouraged and not everyone owns a car, it has become impossible for some of us to access everything we need.





Challenge

Why is proximity not a given?

Proximity in an urbanized context means you don't necessarily need a car to access all the supporting services you need to lead a comfortable, healthy life. It means you have easy access to healthy food, a job, education and health care, but also to leisure opportunities like cultural events, a great public space where you can meet friends or just watch people, and a green space where you can relax or work out.

Proximity means that even if you can't walk or cycle to all these services, you can at least walk to the nearest transit station and use public transport to get there. Proximity doesn't just matter in high-density cities, whose centers are often already mixed-use. It's important at every scale of urban life, in cities, suburbs and towns alike.

Our ancient cities had proximity built in by default. Since there was no way of traveling far and fast, everything more or less had to be within walking distance. Cities were dense and vibrant.

Over time, especially after the introduction of the car, modernist urban planners found it logical to disentangle the city's different uses. We created separate zones for working, housing and shopping, each with its own distinct character.

These zones are often quite far apart, and you need a car or public transit to move between them. Although it seemed like a good idea at the time, we've begun to understand the consequences of this separation. Why is it so important to go back to mixed-use? What happens if we don't build proximity into our cities and towns?

"Proximity is important for all scales of urban life, for cities, suburbs, and towns alike."





Health &
Wellbeing

How does a lack of proximity affect us?

Having easy access to all these basic services may sound like a nice-to-have. Is it really necessary? What is the worst that could happen? Let's take a look.

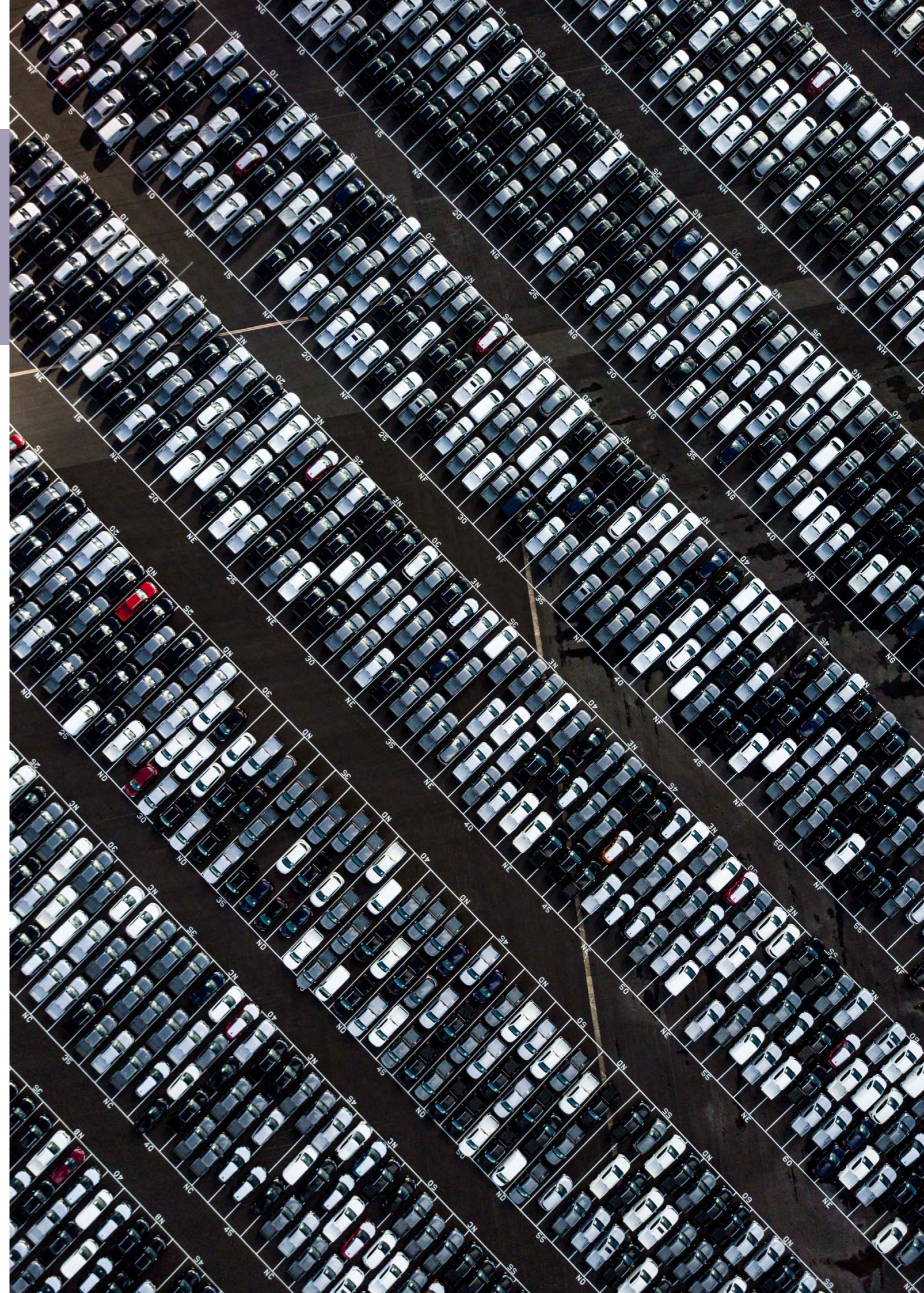
When it comes to healthy food, a lack of proximity can create a food desert – an area where not everyone owns a car and the nearest supermarket selling affordable healthy food is more than a mile away. More than 2% of all US households live in a food desert, and [in the UK more than 1 million people do](#). However, contrary to what we commonly think, it's not only very rural areas that find themselves in this situation. [More than 80% of affected households in the US are actually located in big cities like New York, Chicago and Detroit.](#)

People living in food deserts are far more likely to become overweight and develop conditions such as diabetes. This, in turn, increases their health care spending, leaving less money for nutritious food, thus creating a vicious cycle.

In the Netherlands, the government banned the development of additional large shopping centers at highway locations. Hence, Dutch grocery stores tend to be smaller and located in city and town centers. They not only provide the necessary access to healthy food for a large part of the population but also generate the much-needed foot traffic that enables smaller shops in the area to survive.

Living far away from our jobs leads to longer commutes and [more physical and mental health complaints](#). Spending more time in often congested traffic raises adrenaline levels, blood pressure and overall stress. These, in turn, contribute to a higher risk of stroke and cardiovascular disease. But commuting also has an impact on mental well-being, [causing problems such as sleep disruption and concentration issues.](#)

"Over 2% of all USA households live in a food desert and in the UK it affects just over one million people."





Health & Wellbeing

[A Swedish study](#) even showed that long commutes (over 45 minutes each way) increased a person's likelihood of divorce by 40%. And apart from the immediate health impact, traffic generated by commuting leads to increasingly congested and polluted cities. During the first 2020 lockdown, a significant drop in air pollution levels was recorded in cities around the globe. [A UK study](#) even found that improved air quality during lockdown had prevented 11,000 deaths in the UK and elsewhere in Europe.

A third example of problems that can arise from a lack of proximity is insufficient public space. Proximity isn't just about services but also about being near other people. When we live in neighborhoods without quality public space where people can linger and interact, we tend to feel disconnected and disengaged from our communities. We're also more likely to feel unsafe because we don't know our neighbors.

"A study even showed that long commutes increase your chances of getting a divorce by 40%."

[In the US, only 50% of people say they feel they can trust their neighbors.](#) This situation contributes to raised levels of loneliness, anxiety and depression. And it also makes parents even less inclined to let their children play outside. We discussed how this influences their development in the chapter on child-friendly cities. Various initiatives, however, have begun to reclaim public space; they include the [City Repair Project](#) in the US and the global placemaking movement.

These are just a few examples of how human health and well-being are impacted when we don't build proximity into our communities. So, besides bringing grocery stores back to the neighborhood level and limiting commuting distance and time, what else can we do about it? How can we build proximity into the heart of the city?





Proximity put into practice

Chrono-urbanism - Many cities around the world are recognizing the importance of the proximity concept. Each of them has their own strategies for so-called Chrono-urbanism, which focuses on providing all daily facilities within a 15 or 20 min walk from your house.

Ottawa urges for intensification by creating [residential clusters with schools, grocery stores, public transit, parks, and libraries nearby](#). Alike, Portland aims to add these functions to [affordable housing neighborhoods](#). Paris pushes this concept even further. It wishes to mix 6 functions within 15 min walking distance: [living, working, supplying, caring, learning, enjoying, and finding fulfillment in life](#).

These could happen both on a building level (mixing offices with schools, healthcare centers with bars) or by bringing smaller versions of these functions closer to communities in "citizen kiosks". These kiosks are neighborhood hubs, staffed by city employees, offering different small scale city services.

If a full-scale chrono-urbanism strategy seems a bit much to start with, this concept of the kiosk or neighborhood hub might be a great place to test the water.

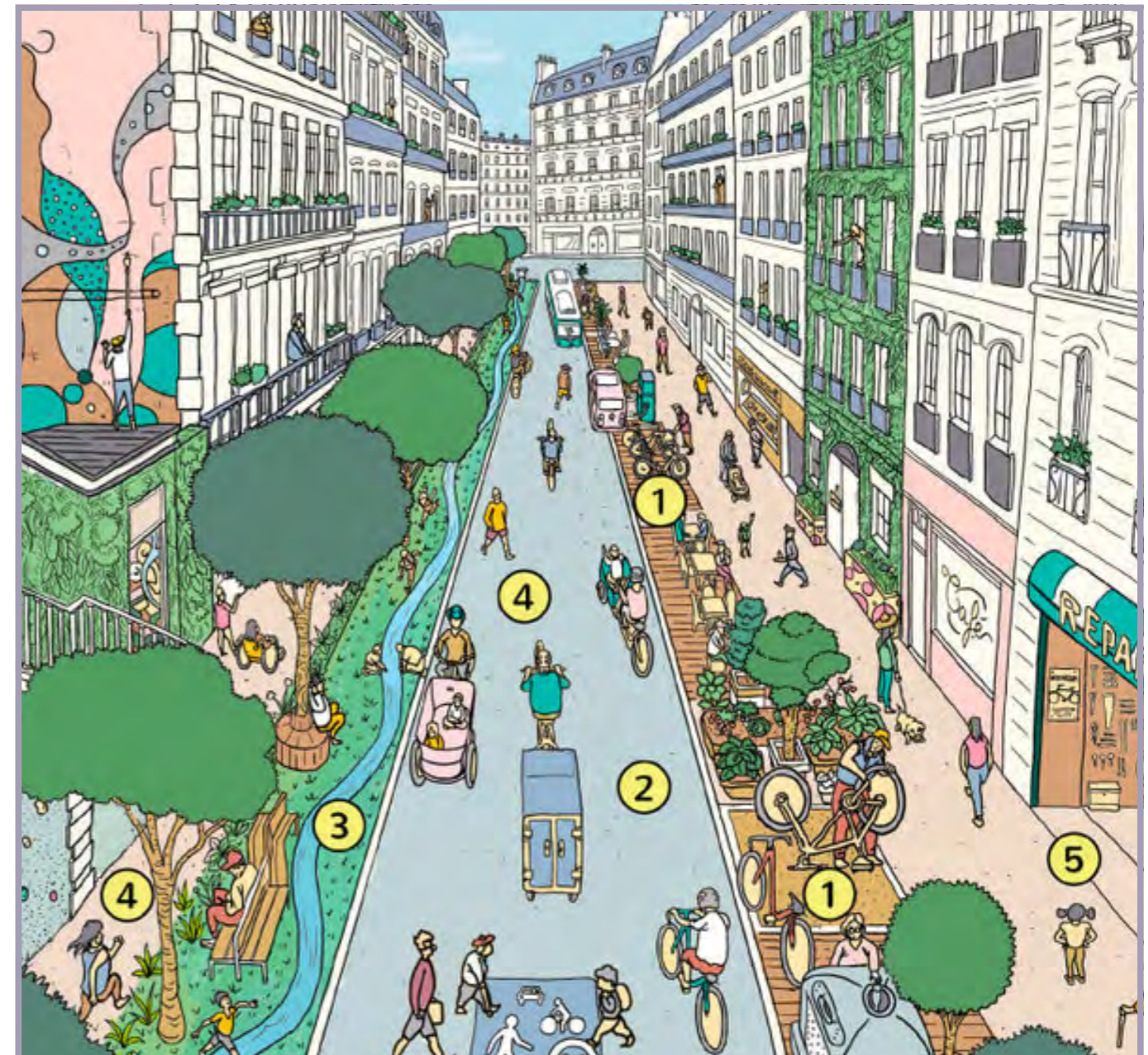
Paris plans to make space for all these initiatives by removing [72% of on-street parking](#) from the city center. The gained space

can be used for wider sidewalks, terraces, greenery, water, and biodiversity to achieve an attractive streetscape. The reduction in car traffic would allow some intersections to be transformed into pedestrian plazas.

Some of these interventions would be permanent, and some, like car-free schools environment, would operate only during

"Paris plans to make space for all these initiatives by removing 72% of on-street parking from the city center."

school hours. Research has shown time and again that pedestrians spend most money and boost economic activity. As their pace is ideal for window shopping and they often spend money on something they see rather than something they need.





Solution

Neighborhood hubs, the proximity pop-up.

A neighborhood hub is a place that connects (city) services to the community and strengthens bonds among community members. Think of it as a place where you pass by to pick up the book you ordered in a central library, enroll in a community football club, or even come to work once or twice a week in a neighborhood co-working space.

Offices, hospitals, and libraries would not land in neighborhoods in their traditional form but rather a smaller version of it: a co-working space, a meeting room, a general practitioner office, or a library reading room as part of a café. This trend is already happening.

Corona lockdown proved that remote working is possible and some companies like [Facebook](#) are already thinking to make remote working a permanent option for their senior staff members.

Although it is important to mention that more remote work should be combined with rethinking employee wellbeing as it often causes lack of fresh air and vitamin D for employees, an increase in mental illnesses, and a lack of opportunity to meet other people leading to increased loneliness and depression. So less central office space might be best combined with more remote co-working options.



A neighborhood hub would be a place that residents pass daily. Citywide services like parcel delivery or shared mobility could also land there as they benefit from the proximity and density of users.

“Less central office space might be best combined with more neighborhood co-working options.”

Imagine, it's a sunny spring day. You want to get some plants for your terrace. You take a 2 min walk to a neighborhood hub, rent an e-cargo bike, and ride to the gardening store. You get the soil, pots, plants you need, and - after dropping everything off at your place - return your bike to the neighborhood hub.

While locking the bike at its charging station, you run into your neighbor who invites you to the street food market organized this weekend. Sharing these expensive technologies like e-cargo bikes can build more inclusivity into the system too.

A neighborhood hub is not necessarily a single building or a kiosk. It could be a cluster located around a public gathering space - much like an old school town square - where the city and also private organizations can provide pop-up or satellite services.

“A neighborhood hub is a place where public and private pop-up services can be provided.”



Solution



The rebirth of the dying shopping mall

Big wins can be gained in places that for decades had very little to do with proximity: shopping malls. Malls are facing a mass transition. A study by Credit Suisse estimates that [25%](#) of those currently operating in the United States will be closed by 2022. Chrono-urbanism can bring these sites back to life by transforming them into dense, mixed-use, pedestrian-friendly areas – new centers for the surrounding residential neighborhoods. A great example is Villa Italia. This 130,000m² suburban former shopping mall in Lakewood, Colorado, was subdivided into 22 city blocks, creating a “downtown district.” Imagine the sheer scale of the old shopping monolith.

Today, the vast site accommodates [office space, green areas, a public art program, retail, and 1,300 for-sale single-family homes, townhouses and condominiums, as well as loft-style rental apartments.](#) A free shuttle bus connects the district to a new light rail station, encouraging people from elsewhere in the region to leave their cars at home.

A similar transformation is also taking place in Europe. [In de Bogaard](#), one of the Netherlands’ first modern shopping centers, is currently being transformed from a half-empty mall into a vibrant mixed-use, pedestrian-focused neighborhood. A vast 20,000m² of retail space is being removed, and 2,000 new homes are being added, along with complementary facilities.

The plan envisions a car-free neighborhood that will serve as a second city center, with vibrant lanes, squares, different-sized parks, and rooftop and ground-level gardens. The neighborhood’s size and its car-free character will allow for informal exercise, such as running around the block and playing in the street.

“Studies estimate that by 2022, 25% of shopping malls will be closed in the United States.”

Proximity makes for stronger neighborhoods and vibrant cities.

There are many ways we can start building proximity into our neighborhoods from creating space for walking and cycling to community hubs or rethinking how we work together. Proximity is about much more than injecting shops into a neighborhood. It is about rethinking how services are provided, how and where we collaborate and meet each other.

Our neighborhoods and cities should give us access to "living, working, supplying, caring, learning, enjoyment, and fulfillment in life" as Paris describes it. The beauty is that we can start on many different fronts, from a mobility perspective by providing more space for pedestrians and cyclists

Healthy food for all

A healthy city can't exist without nutritious food for everyone. We all need fuel to lead healthy, fulfilling lives. During the 2020 COVID-19 crisis, food banks in [Europe](#), [Canada](#) and the [US](#) saw demand spike by 10% to 50%. This shows just how tight a budget many people are living on. Even in better times, food security is a growing problem, in Western cities as well as elsewhere.





Challenge

What determines food security?

Food security is a complex problem that touches on many aspects of society. It's linked to the organization of the food value chain and how much land is available for agriculture. Urban sprawl, for example, can have a serious impact on the remaining productive land.

Agricultural land is also under pressure from several other transitions: changes in energy production, a warming climate, declining crop yields because of soil depletion, to name a few. However, it isn't just land availability that matters: rising housing prices, public transport access and zoning bylaws also play key roles in food security. In many cities, families are spending an increasing amount of their income on housing and transit, leaving less on the table for everything else, including healthy food.

However, food security isn't just about affordability: it's also about accessibility. More than 2% of all US households live in a food desert or a food swamp (an area with too many unhealthy dining options), as do more than 1 million people in the UK. Food deserts are areas where not everyone owns a car and the nearest grocery store selling affordable healthy food is more than a mile away. Plenty of unhealthy food is available in food swamps, but it's nutritious food that matters most.

"Over 2% of all US households live in a food desert or a food swamp and in the UK it affects just over one million people."





Health &
Wellbeing

How does food insecurity hurt people?

High- or low-income, almost every city in the world is affected by food insecurity and some form of malnutrition. [In low- and middle-income regions](#), undernutrition is often the main challenge, leading to low birth weight and stunted growth in children and setting them back early in their development.

In upper-middle- and high-income regions, food insecurity is strongly linked to overweight and obesity. In these regions, some areas lack easy access to affordable healthy food, while ample cheap fast food is available. Unfortunately, fast food provides a lot of calories but very little nutritional value. Consuming empty calories, people don't feel hungry yet are at risk of severe nutrient deficiencies.

Children and adolescents are especially at risk, as they need vitamins, minerals, fiber and healthy fats for physical development. There is a strong link between child obesity rates and the availability of fast food within a 400-meter radius of schools. If cheap fast food is readily available, it is an obvious choice.

Food insecurity and malnutrition don't just affect people's health and development, though. They also impact the economy and aid in perpetuating poverty through [lower productivity, poor cognitive function, learning deficits and increased health care costs](#). Research has shown that not eating breakfast, perhaps because one's household cannot afford it, leads to lower academic performance in children and lower productivity among employees. If a child's underperformance is constant, it can create a lasting academic setback.

"If cheap fast food is readily available, it is the logical choice."



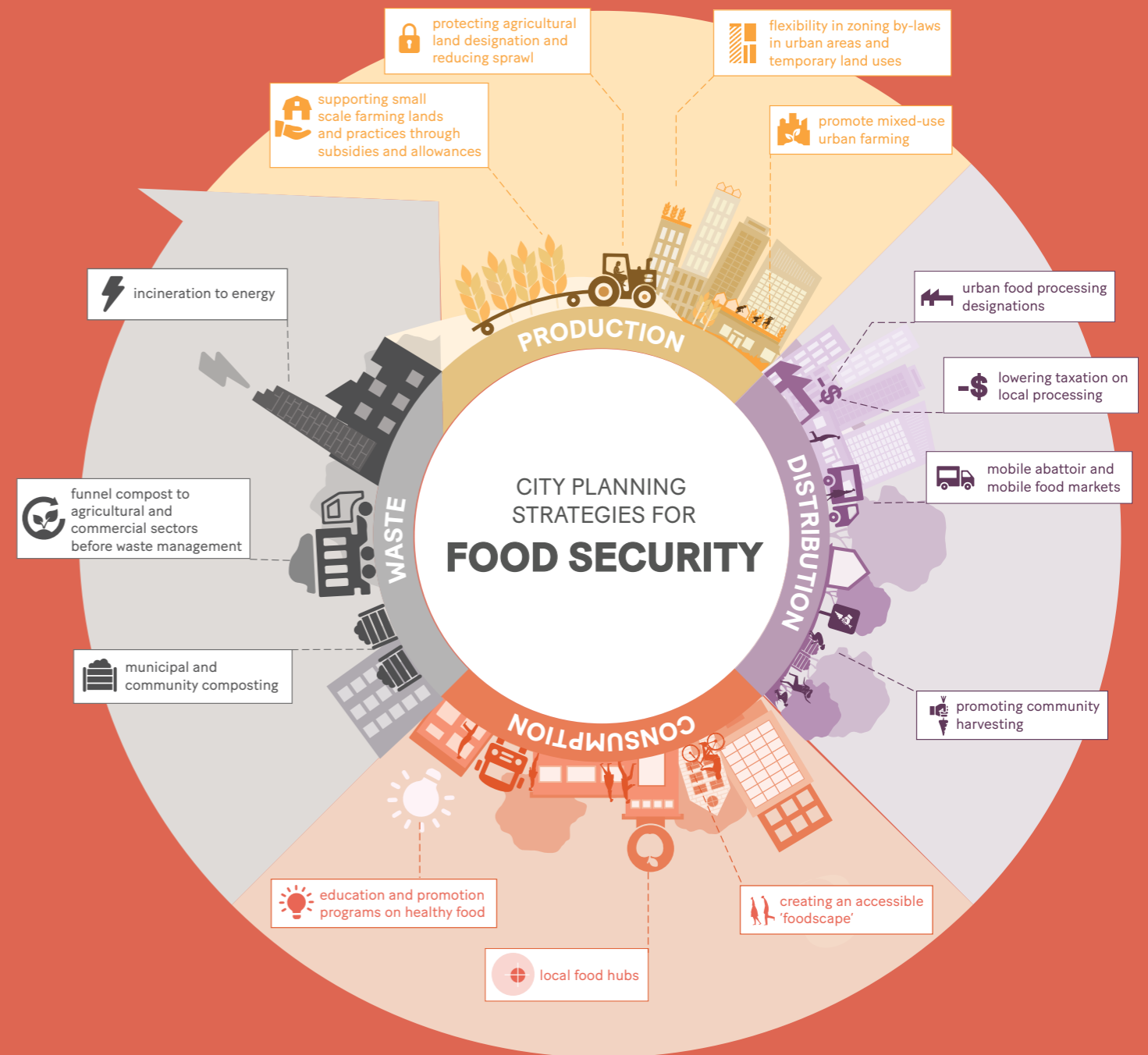


Solution

The road to food security

The food system is increasingly acknowledged as an integral part of our cities, just like transportation and housing. Though food is a complex topic, urban policies and spatial design can play a significant role in shaping the food cycle and its connection to our homes, workplaces, public spaces and public institutions.

There are many examples of cities and organizations that have found attractive solutions for tackling food insecurity. So what can we do at the city level? The graphic below provides some ideas on how urban policies and design might help at each stage of the food value chain.





Solution

Production

Although centralized industrial food production can deliver cheaper products and dominate the market, it is often not the healthiest or most sustainable option. Local food production can provide a more sustainable, healthy, and resilient food network. However, it is challenged by competition in land-use, cost of labor, and planning policies that make local agriculture close to the city and the consumer difficult and a more expensive option.

How can planning help?

Municipal policies can directly and indirectly help promote local food production. Planning and zoning regulations can control farm sizes, allowing for flexible food production in rural areas. They can reduce suburban expansion into prime agricultural land and promote urban farming through flexible zoning and allowances, whether in the form of more traditional urban farms, [high-tech vertical farms](#) or indoor farms, like Seven Steps to Heaven in the Dutch city of Eindhoven.

Influencing zoning law could also mean proposing farming as a temporary land use for vacant lots or new programming for abandoned buildings, which could become indoor vertical farms.

“Urban policies can reduce suburban expansion into prime agricultural land.”

What’s already happening?

At [Stichting Eemstadboerderij](#), a local urban community farm in Amersfoort, the Netherlands, anyone can buy a share or subscription and enjoy the farm’s vegetable, flower or egg harvest.

The UN’s [Food and Agriculture Organization](#) has been supporting neighborhoods in Medellín, Colombia, in the building of community gardens. More than 7,500 families are now growing their own food, with the possibility of selling the surplus. In light of the project’s success, Colombia is now developing governmental initiatives to promote similar schemes across the country.

“More than 7,500 families are now growing their own food.”

[The city of Detroit](#) is the biggest producer of city grown produce in the US, with a grassroots network of over 1,400 urban farms. With 70% of the local population obese or overweight, the lack of healthy produce is a problem for communities. The urban farming movement is not only tackling the food access issue but also creating a stronger sense of community, jobs and safer neighborhoods.





Solution

Processing

Similar to food production, small and medium-sized processing businesses are pushed out of the market by larger global competitors. Local food producers often face high property tax for on-farm processing, forcing them to ship their local produce to centralized processing plants far away. Locally caught [Belgian shrimps](#), for example, are sent all the way to Morocco for peeling and are then imported again for local consumption.

How can planning help?

Municipalities should aim to direct their policies to promote processing facilities in a community processing center or on the local farmland itself. Policies can support various local types of processing facilities like mobile abattoirs or incubator kitchens. This could happen through zoning allowances (allowing food processing in urban areas), lowering taxation of local food processing plants, and community involvement in the access of farm-fresh food.

What's already happening?

[A German mobile abattoir](#) is keeping meat processing local and cutting out supermarkets as intermediary sellers, keeping the food value chain short and simple.

Amsterdam's [Pluk! Groenten van West](#) is an urban farm where, for an annual fee, anyone can go and harvest their own food weekly. It's just one example of numerous similar initiatives around the globe.

"Policies can support various local types of processing facilities like mobile abattoirs or incubator kitchens."





Solution

Distribution and consumption

As we discussed in our article on proximity, enabling people to meet all their basic needs within walking distance should be a fundamental goal for every neighborhood. This is especially important when it comes to healthy, affordable and locally produced food. While local organic grocery stores and farmers' markets are popular in certain neighborhoods, they often charge premium prices.

But changing one's diet doesn't depend only on access and cost. It's also influenced by the local "foodscape": the convergence of public spaces, public life and food spaces. Children and young people are especially susceptible. When in search of a quick bite and a place to hang out, if the cheapest, closest, friendliest option is a fast food place, that's where they'll go every day.

How can planning help?

While food markets and farm-to-table initiatives can bring healthy and affordable local food to underserved communities. By providing public space and easy permits for them, policies can boost these initiatives. When it comes to foodscapes, concrete guidelines like these from Danish [Gehl Studio's](#) research could be incorporated into policy and project briefs.

What's already happening?

In the 1990s, Belo Horizonte in Brazil was one of the first cities to create a [comprehensive food security plan](#) and integrate it into its city planning process. Appointing a municipal secretary for food supply, security, and nutrition changed everything. Today, this approach is still looked at as a global best practice.

Location	 Close proximity to where physical activity takes place	 Walking distance from home and/or school	 Accessible day and night
	 Varied seating options for large and small groups	 Access to sheltered outdoor spaces	 Safe and secure protected from traffic, noise, crime etc.
Environment	 Colourful and interesting aesthetic	 Ability to take ownership	 Ability to be spontaneous active or passive
	 Welcoming and accepting staff	 Affordable food options	 Varied ways to stay opportunity to bring own food, buy to stay or take-away, stay with friends who buy
Offering			

In Toronto, the YMCA operates a [Harvest Share Program](#). A membership program that delivers a share of their local organic farm's harvest at different YMCA centers where you can pick it up on a weekly basis. Bringing the farm-to-table concept into an environment that many vulnerable groups feel comfortable with and linking it with food education through their youth camps that help out on the farm.

[Mobile food markets](#) are popping up all over North-America. In Washington, DC, for example, a retired school bus brings sustainable local produce to schools, parks, churches and senior living facilities in underserved communities. Almost half of its produce is sold to customers who depend on some type of government food support.



Solution

Waste

Cities often lack the capacity to collect and process food waste in a sustainable way. However, when we look at waste as a resource and the food value chain as a circular process, food waste collection and reuse can have very interesting applications and contribute to better food security and more circular food production.

What is already happening?

[Community Composting](#), a service in Rochester, New York, is a great initiative that collects all its members' organic waste for reuse in the new planting season. It fosters good habits for community members and represents an important boost to curbing landfill use, replenishing the soil and reducing greenhouse gas emissions.

[A joint project by Canadian](#) retailers and food banks provides almost 13 million lbs. (5 million kg) of food every year to food bank users. It would otherwise go to waste and end up in a landfill. Growing mushrooms on waste coffee grounds is a prime example of circular food production and is being used by numerous farmers already. At the circular economy hub Blue City in Rotterdam, RotterZwam grows oyster mushrooms in this way. It's just one example of how food waste can become a food resource again.



Urban planning is an important piece of the food security puzzle.

As food insecurity threatens an increasing part of our urban population, we can no longer neglect the role city planning and design can play in tackling this challenge. When we want to build healthy cities, access to affordable healthy food is a crucial part of the story.

Entire communities and even cultures are built around food. Local healthy food can create jobs, community, and provide children with a good start in life. Making that healthy food transition happen in our cities means improving every part of the food value chain so everyone has equal access to the healthy nutrients we all need to thrive.

Affordable Housing

In India, the first lockdown in March 2020 caused mass migration from cities back to rural villages as informal workers sought to escape poor living conditions and overcrowded slums. In North America, students moved back home, no longer able to afford housing after their temporary jobs vanished. And in Toronto, a [rent strike](#) occurred in April, after just two weeks of lockdown, illustrating how unaffordable housing is for large groups of city dwellers. And we haven't even mentioned the [1 billion people who live in informal settlements](#) like shantytowns and refugee camps, for whom "stay home" is an altogether impossible command.





Challenge

What does unaffordability really mean?

Affordable housing is generally defined as a dwelling where an occupant pays no more than 30% of his or her income for gross housing expenses, such as rent and utilities. Some interesting numbers showing the gravity of the situation are summarized in the infographic below.

More than [half the US population](#) pays more than that, with 20% of Americans spending more than half their income on shelter. In Europe, Eurostat classifies renters as overburdened if they have to spend 40% of their disposable income on rent. By this definition, [1 in 10 Europeans lack access to affordable housing](#).

However, affordability is about more than the 30% or 40% metric. The concept of affordable housing should also mean people are able to meet expenses related to living in an area.

You might be able to afford a home in a certain area, but if living there requires you to own one or two cars or rely heavily on public transit to get to work or school, it might not be so affordable in the end. In Toronto, [the average cost of housing, utilities and transport](#) alone eats up about 50% of the [median income](#). Yet living in a more affordable suburb and commuting to the city comes with its own health challenges, as described in the chapter on proximity.



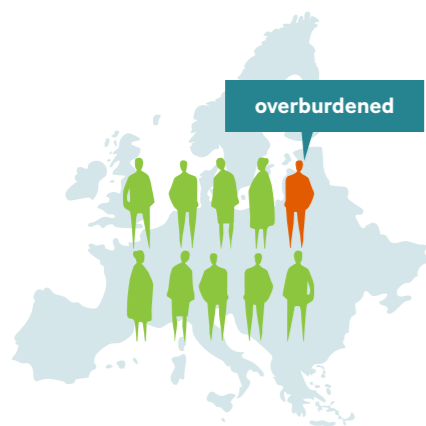
Who is affected most?

Owning our own homes creates stability and generally allows us to accumulate wealth. It contributes to our economic well-being and quality of life. However, with [housing costs rising faster than income](#), more and more people are excluded from this crucial stepping stone in life. The [population groups](#) that seem to be especially vulnerable are young people, migrants and the working poor. But the middle class is also struggling. A middle-class income exceeds the social housing threshold but is often too low to buy a house.

Yet middle-income groups are [crucial for building vibrant cities](#). They provide a big share of property tax revenue for local government and are often active consumers who tend to spend a large part of their income at local businesses such as grocery stores and restaurants.

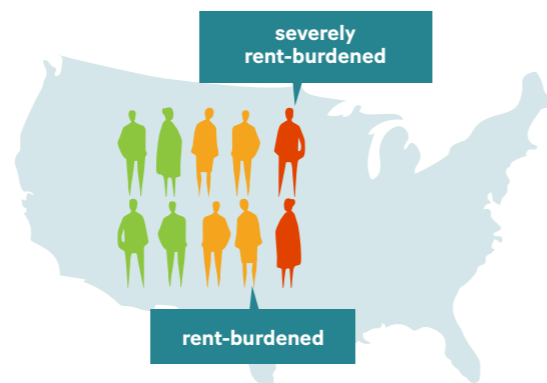
They are an engaged group that tends to challenge local government about a lack of high-quality neighborhood amenities, such as parks, libraries, public schools and transport. Affordable housing is not a marginal problem. It is affecting a fast-growing segment of the population, with significant consequences for health and well-being.

“Middle-income groups are crucial for building vibrant cities.”



Percentage of income spent on housing:

- below 40%
- over 40%



Percentage of income spent on housing:

- below 30%
- 30 - 50 %
- over 50%



Health &
Wellbeing

What are the human costs of unaffordable housing?

Acquiring a roof over one's head doesn't put an end to the problem. The quality of that roof is just as important. On average – and certainly in 2020 – we spend more than half our time at home. This means that no other environment influences your health more than your own home: not even your air-conditioned office, your car stuck in a traffic jam on a polluted freeway, or a crowded train carriage. Unsatisfactory living conditions not only directly influence a person's physical and mental health but can also indirectly hinder their relationships with others and their position in society.

To limit costs, people often settle for lower-quality housing, which increases their [exposure to multiple health threats](#). Overcrowded homes increase the risk of infectious disease, while poor sanitary conditions contribute to the development of chronic disease. Leaks and damp, which affect [more than 10% of EU citizens](#), can cause respiratory infections, headaches and nausea.

Dust worsens allergic reactions, and excessive indoor temperatures contribute to irritability and social intolerance, while low temperatures can cause anxiety and depression. And then there are light and noise pollution, which affect [one-quarter of residents of highly developed countries](#) such as Germany and the Netherlands and can cause chronic sleep deprivation, cardiovascular disease and mental health issues.

These are just a few examples of the direct health impact of low-quality housing. Moreover, when shelter takes up the majority of one's income, it also causes indirect harm, as savings have to be made in other areas of life, such as food and health care.

Housing conditions can also have a huge influence on interpersonal relations and professional performance. Young people often [postpone the decision to start a family due to problems with housing](#). An inability to find affordable accommodation in the desired location, close to work or relatives, may lead to a person giving up professional ambitions or becoming socially isolated because of loosening family ties.

“Housing conditions can also have a huge influence on interpersonal relations and professional performance.”

Financial obligations and a lack of alternatives press people into enduring dysfunctional relationships just to avoid losing their homes. [Increased rates of domestic abuse during the 2020 lockdown](#) shed more light on this tragic arrangement. Near-lifelong mortgages discourage people from switching jobs and force them to postpone retirement.

It is clear that affordable housing isn't just about economics. It has a significant impact on health and well-being too. And it is a key foundation of many other aspects of a happy, healthy life, such as food, education and strong social connections.





Solution

How can we make housing more affordable?

Although affordable housing is a complex problem that varies from city to city, certain main drivers tend to play a significant role. These include demographic shifts like ageing and population growth and the problem of housing costs rising faster than income. No matter the drivers, the result is most often a mismatch between supply and demand. So why are we not able to meet rising demand?

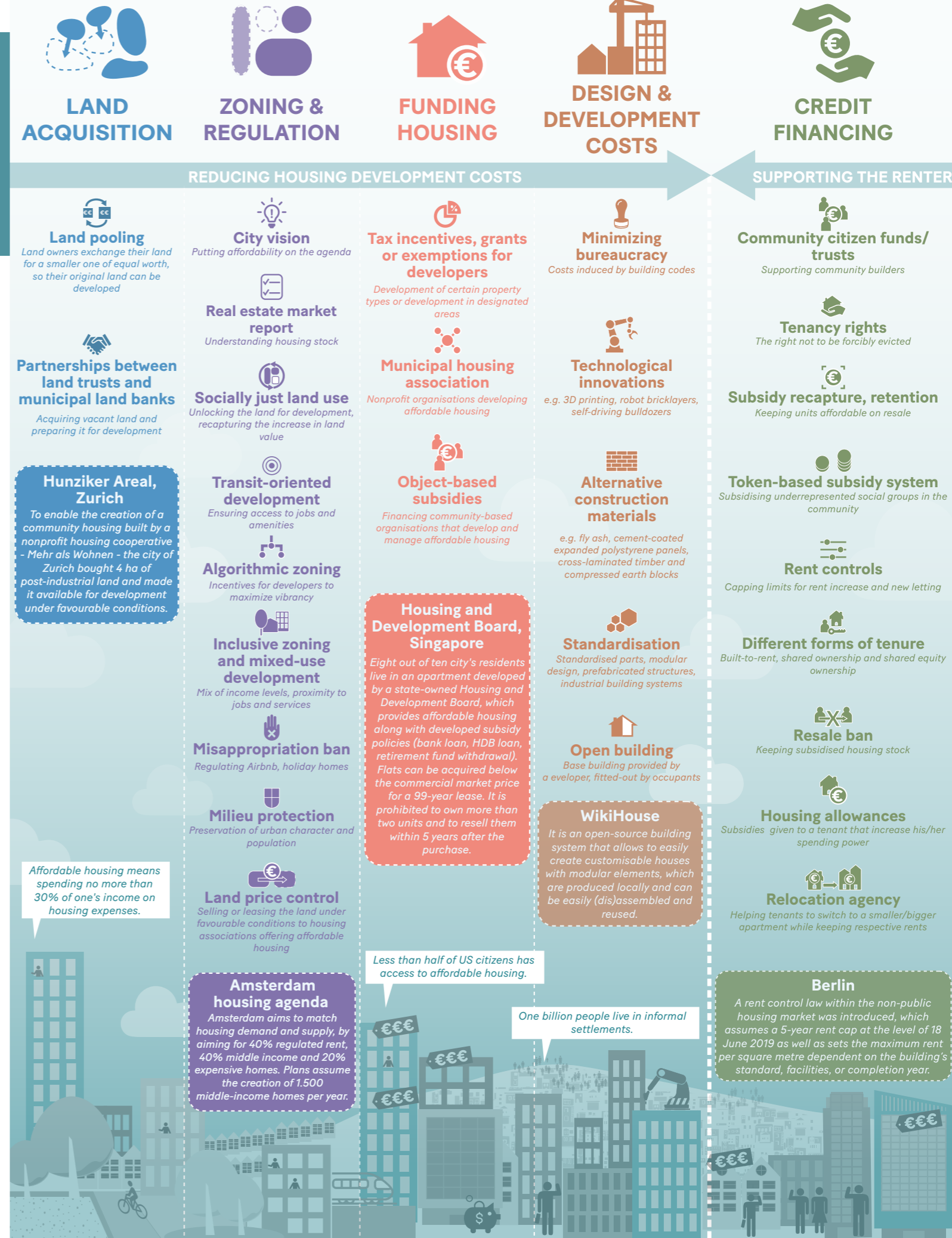
Some cities are plagued by extreme speculation on the housing market, with investors deliberately keeping units off the market to drive prices up. Sometimes a scarcity of land raises prices, or land-use or zoning restrictions limit where new housing can be built. Whatever the drivers are in your city, there are many examples of mechanisms that can help a city to stay affordable and keep poverty and homelessness at bay. The infographic below shows various examples of the kinds of things that can be done and ways cities have taken concrete action.



“Rising housing prices are the result of a mismatch between supply and demand often caused by o.a. population growth and demographic shifts.”

AFFORDABLE HOUSING INSTRUMENTS

Buying or renting a home is becoming unaffordable for a growing segment of the population globally. What are some measures we can take to increase affordability for all?





Solution

Strong government policy in Singapore

Singapore boasts one of the highest percentages of home ownership in the world. Nine in 10 of its citizens own a home, but – exceptionally – only one of those nine has purchased it for its commercial market value. That person usually belongs to a high-income or expat segment. In the 1960s, Singapore, a country with an exceptionally high percentage of millionaires and extensive urban slums, created [the state-owned Housing & Development Board \(HDB\)](#) to provide affordable housing, along with specific loan policies (e.g., for bank loans, HDB loans and retirement fund withdrawals). Flats are offered with a 99-year lease, and it is prohibited to own more than two units or to resell one within five years of purchase.

Singapore treats [housing as a social asset](#) and always approaches it as part of an integrated placemaking strategy. As a result, every housing development is connected to a public transport node and offers supporting facilities such as schools, health care services and restaurants. A quota system also regulates ethnic distribution, so that each block of units has an ethnic composition similar to the national average.

This kind of strong government regulation might not work everywhere in the world. Still, it is an interesting example of how treating housing as a social right, combined with strong government action, can help a city and its citizens thrive.



A community-driven solution in Zurich

Future residents of a place can also take matters into their own hands and act from the supply side. This was proven by the residents of the Hunziker Areal housing development in the Leutschenbach district of Zurich. The project was conceived by a nonprofit cooperative, [Mehr als Wohnen](#), which arose out of the merging of 55 smaller ones. The city of Zurich made four hectares of postindustrial land available for development under favorable conditions. The cooperative underpriced 20% of the flats and reserved them for families on welfare and offered the rest at a fair but not excessive market price.

The design of the Hunziker Areal development focuses on sharing rather than owning. A master plan proposed a set of collective principles which several architects later translated freely into diverse typologies for people in different phases of their lives. As a result, the project has many common spaces, such as winter gardens, common kitchens, co-working spaces, workshops and rooftop gardens. To avoid too much homogeneity, [the project includes small businesses](#) such as dance and yoga studios, bakeries and a day care center. These not only serve the locals but also attract customers from all over the city, turning Hunziker Areal into a vibrant neighborhood.

A rent cap regulation in Berlin

Unregulated housing markets always result in a shortage of affordable housing and a large supply of expensive units tailored more to investors than local inhabitants. Cities such as New York, Vienna, Madrid and Amsterdam constantly struggle with rising rents, each in its own specific way, necessitating an ongoing adjustment of policies and housing market controls with no one-size-fits-all solution.

In 2017 rents in Berlin [rose by 21% within a year](#), which is disproportionately high compared to the average income rise. Berlin is dealing with this problem by introducing a rent control law for [the private housing market](#). It sets a five-year rent cap based on levels in effect on June 18, 2019, and a [maximum rent per square meter](#) depending on a building's standard, facilities and/or year of completion. It is designed to restore balance to the market and stop residents fleeing the city center for cheaper suburban areas.

Affordability can be tackled from many different angles.

A lack of affordable housing is a problem in most mid- to large-scale cities. It will not get any better if we simply let market forces have their way. Fortunately, there are many measures we can take to mitigate the impact, and the power to act doesn't lie solely with city hall.

Developers, banks, construction companies and the rest of us all have a part to play. Citizens and local communities can contribute by joining forces, as the members of Mehr als Wohnen did in Zurich.

Rewilding our cities

As cities grow denser, the use of green spaces increases rapidly. If you're lucky, your local park provides the relaxing, calming experience we're all looking for. For many, however, there simply is no green space within walking distance, the quality is poor, or an overcrowded park with a busy mix of adults, kids and dogs turns out to be anything but relaxing. Over the past several decades, our lack of access to quality green space has resulted in an increasing alienation from nature. When we design our cities without, or even against, nature, it not only affects the environment but also our mental and physical health.





Challenge

How we designed our cities against nature

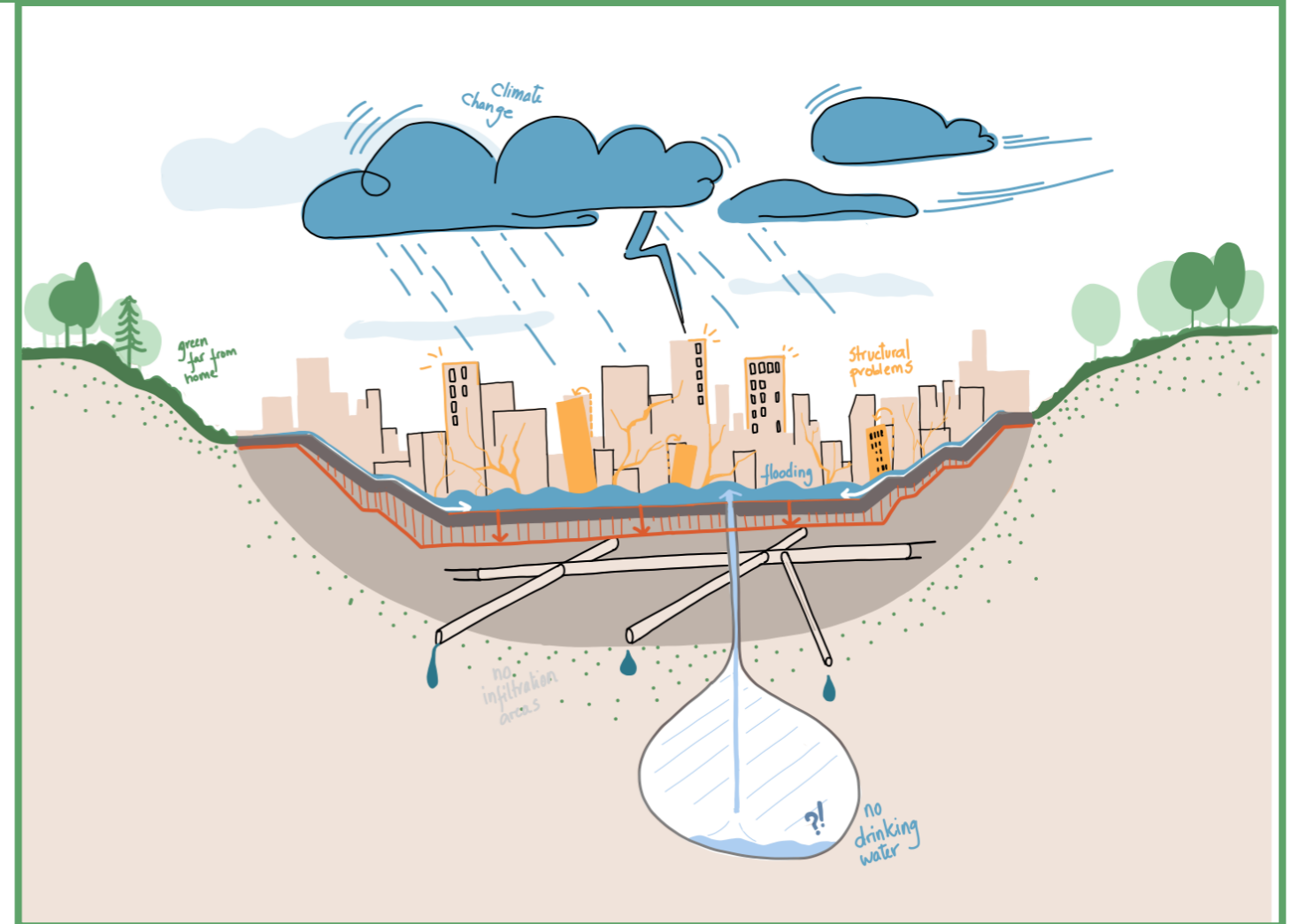
In the last century or so, the world has urbanized rapidly and made fundamental changes to society, agriculture and technology. As our global society has flourished, more of life has moved indoors, open space has crumbled under the pressure of urban density and traffic, and media and electronic communication have changed our behavior. Over time, a focus on growth led to a shift from a rural economy to an urban one. Cities became the drivers and also the consumers of this growth.

[With over 55% of the world's population now living in urban areas](#), our cities are rapidly altering and consuming nature in order to provide the resources we need to live our lives, from drinking water to farmland and raw materials. The result: reduced and depleted nature. Designing our cities against nature has led to sinking, dried-out and flooded places.

Mexico City, once a natural paradise, is an unfortunate but illustrative example of the challenges a lack of quality green and blue structures can bring to a city and its inhabitants. Now a "paved paradise," the city once had a rich system of rivers and lakes. After draining the lakes and moving the rivers underground to make room for more people, Mexico City now faces a [paradoxical problem](#).

Even as it is running out of drinking water, it is also dealing with major flooding issues. And in an attempt to solve the drinking water shortage, it is creating another problem. Pumping up large quantities of groundwater is causing subsidence, leading to problems including structural instability in buildings and infrastructure. This is a growing problem in many countries. In [Amsterdam](#), trees are now planted on artificial foundations to keep them from toppling when the ground subsides further. Meanwhile, the rainwater that should be replenishing the potable groundwater cannot penetrate because of impermeable paved surfaces.

"Designing our cities against nature has led to sinking, dried-out and flooded places."



Nature in cities is more than just nice to have because it looks good. It is crucial, because it fulfills many different vital functions. When we take away its ability to do that, we have to replace it in one way or another, and doing so is never free. From water retention and flood management to the reduction of air and noise pollution, nature

provides vital defenses against extreme weather and environmental contamination. It also increases the economic value of real estate and entire neighborhoods. However, its greatest service might be improving the population's health.



Health &
Wellbeing

How does a lack of nature in cities affect us?

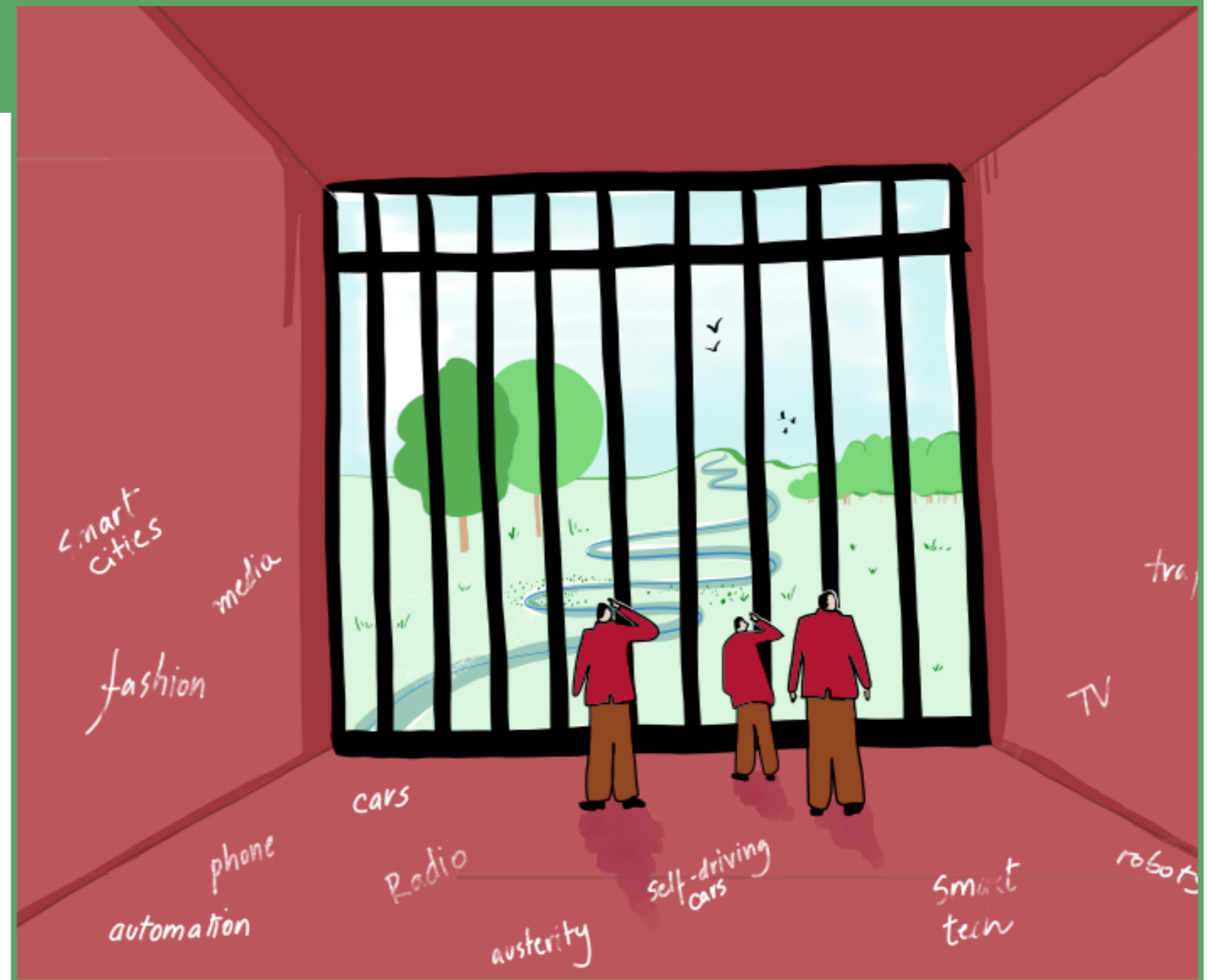
Our lack of high-quality green space and disregard for existing water networks have created some serious health risks. In 2005, [Richard Louv](#) coined the term “nature-deficit disorder” to raise awareness of the health impact of our disconnection from nature. Since then, a growing body of research has been helping us understand just how much we could benefit from improving the green and blue networks in and around our cities.

Having a high-quality, safe green space close to home has shown to [increase people’s physical activity](#) and social interaction. And this helps to reduce the risk of overweight and cardiovascular disease. That might seem like a no-brainer, but the health benefits go much further, from a decreased risk of [breast cancer](#) to a reduction in [aggression and violent behavior](#) and a positive impact on children’s development. Children who grow up with lots of access to and contact with nature have shown better [cognitive development](#) and less anxiety. But playing in the dirt also helps to build a [stronger immune system](#) and lowers the risks of [psychological disorders](#) later in life.

In light of all these benefits, it’s no wonder the Japanese ritual of forest bathing (shinrin-yoku) has caught on elsewhere. By the 1980s, the Japanese had recognized the benefits of walking or “bathing” in the woods and started incorporating it into their national health program.

Since then, more than 62 areas in Japan have been officially declared “[forest therapy roads](#).” But you don’t need to go wandering in the woods to reap the benefits of nature. [A US study](#) showed that patients who could see a tree from their rooms recovered measurably faster than patients whose rooms looked out onto a blind wall.

“Having a high-quality, safe green space close to home has shown to increase people’s physical activity and social interaction.”





Health & Wellbeing

Rewilding our cities has other, more indirect health benefits too. When we restore the environmental health of cities, it positively impacts our individual wellbeing. As heatwaves occur more often, the shade and cooling effect of trees will protect us from overheating and heatstroke, a growing problem for young children and elderly people in particular.

Mitigating flood risk by making designs that take water into account rather than designing against it helps to limit the risk of unsanitary conditions and the spread of disease.

Sinking in cities causes structural instability and potential collapse in buildings and makes trees fall over, further reducing available green space.

There are many direct and indirect health benefits to rewilding our cities. It can lower health care costs, improve productivity and boost quality of life. Yet rewilding is often perceived as an expensive nice-to-have that carries high maintenance costs. Cities seem more eager to repave a new square than plant more trees. So how can we accomplish this and reap the benefits?

“When we restore the environmental health of cities, it positively impacts our individual wellbeing.”





Solution

Rewilding our cities

Bryant Park, New York:

Shared effort and investment

What was a no-go area 40 years ago is today a vibrant park in one of Manhattan's most expensive and densest neighborhoods. It has outdoor cafés, chess tables, high-quality green areas and a wide range of activities all year round. And it wasn't the city that came up with the idea of the transformation, or even paid for it. Rather, local stakeholders initiated the changes and set up the private nonprofit Bryant Park Corporation (BPC), which is responsible for the park's physical management and programming.

It's funded by parties including local property owners, who understand that a high-quality park raises property prices, and local restaurants that benefit from increased pedestrian traffic in and around the park. BPC keeps experimenting with the model, programming and design to evolve and adapt to changing needs and insights gained. The park is a beautiful example of the impact high-quality green space can have on a neighborhood and an innovative model for making it happen.



Princess Gardens, Berlin:

Bottom-up rewilding

In Berlin's Kreuzberg district, a group of residents took matters into their own hands and converted an abandoned lot into a community vegetable garden. They grow fruit, vegetables and flowers there, but more importantly, the garden has created strong social cohesion and a sense of community around it.

It also serves to educate people about local food production and what biodiversity in the cities of the future might look like. But most of all, the success of this project shows that small-scale initiatives and green spaces are as important as large ones.



Parque Lineal La Viga, Mexico City:

An illustration of co-benefits

Covering almost 16,500m², the Parque Lineal La Viga in Mexico City was constructed in 2015 in an attempt to address multiple challenges at once. It might not look all that lush or green, but it is uniquely adapted to Mexico City's hot climate and water management issues. The park helps to mitigate floods, drinking water shortages and heatwaves. It is within walking distance for 30,000 inhabitants and can be reached by another 4.6 million in less than 30 minutes on public transit.

Connecting the park with so many people has contributed to the economic development of the surrounding underprivileged communities. On a smaller scale, inviting local citizens to co-design the park and giving them a high-quality outdoor gathering space has increased social interaction and cohesion too. Due to the success of the Parque Lineal La Viga, the city has begun building an even bigger park in the densely populated and marginalized district of Iztapalapa.

"Small-scale initiatives and green spaces are as important as large ones"

Nature is a cornerstone of our cities, not a nice-to-have.

Nature provides many valuable services in and for our cities, from water management and cooling to improving our mental and physical health. When we push nature out, we must replace the services it provides with often costly alternatives. Designing in harmony with nature in urban environments allows us to create co-benefits and save on other efforts. So why do we keep looking at it as a nice-to-have?

Colofon

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At PosadMaxwan we work on the healthy, sustainable and smart city. We provide insight into what the city of tomorrow will look like and what we can do today to realize that ambition.

We do this by combining urban research, strategy, design and implementation. We identify current challenges, ask relevant questions and make use of data for human solutions. This way, we make the issues understandable and we can come up with new, spatial answers.

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Rewilding our cities

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