

How to Design a City for Life?

*8 ways to better adapt
to climate change*



What does a living, climate-resilient city look like?

With the uncertain climatic, political and economic future of the upcoming decades, the vital question we need to ask is: How can we live in a way that is socially, economically and environmentally sustainable? This question is particularly important in cities, now home to more than half of the world's population, a share that is likely to rise to 70% by 2050.⁽¹⁾ At first glance it might seem that sharing space and infrastructure with a large number of people makes living in cities the most environmentally-friendly alternative. However, despite numerous partial savings, cities are responsible for almost three quarters of global CO₂ emissions.⁽²⁾

Climate change already affects cities considerably. Many regions, including ours, have been working on climate change adaptation strategies and companies are investing in energy-efficient buildings and green roofs. Yet there are still too few debates on specific measures that can mitigate climate change and help us adapt to it. Few municipal councils are willing to advance conceptual and comprehensive measures if their implementation will take more than one electoral term.

Clearly, there is a cost to system measures – whether we are talking about blue-green infrastructure, energy decentralization or sustainable mobility and development. In this case, however, nothing is more expensive than doing nothing.⁽³⁾ The sooner we start to take comprehensive measures, the smaller the risk that living standards in cities will drop dramatically in the following decades. This kind of investment will bring returns by reducing the cost of floods, drought and heatwaves, as well as bringing savings on power, water and heating.

This booklet is a follow-up to the 2016 publication called “How to Design a Fairly-Shared City”. We have selected 8 areas in which more efficient planning can increase the city's resilience. We would like to highlight the fact that cities have a huge potential in the transformation to sustainability.

In this guide to designing “a city for life”, you will be accompanied by teenage siblings Emma and Dan. Young people are more and more often taking the lead in civil society and pointing to the necessity of change. In this cartoon, Emma and Dan, together with their friends and family, are ready to take the necessary measures and they succeed in engaging the whole neighbourhood. Indeed, we can take many such measures in our households, workplaces, neighbourhoods and communities. Nevertheless, we will not be able to manage without system changes and solutions.

Although this topic can be a tough one, we believe you will enjoy reading this booklet and find inspiration for your personal and political life. This publication is intended for all of us who care about the place where we live.

Adéla Jurečková

Director of Heinrich-Böll-Stiftung Prague office

Klára Schovánková a Žaneta Gregorová

Programme coordinators of Heinrich-Böll-Stiftung Prague office

Jan Blažek

*Economist and social geographer,
Department of Environmental Studies,
Faculty of Social Science, Masaryk
University*

Concern for our shared future

1 *Who is responsible for making changes, and how can we participate?*

The future of the climate brings major uncertainty for city dwellers. There is huge pressure on individuals to do the right thing – buy organic food, live in an environmentally-friendly house, avoid travelling by car and reduce waste. **Can we – as individuals – rely on the state and the market to act in accordance with the needs of a sustainable city?** Will there be a sustainable mobility system in our city, similar to those in the Netherlands or Scandinavian countries? Will municipalities become climate neutrality leaders, like in Germany or the United Kingdom? Will housing be affordable as well as environmentally-friendly, like in Vienna?


Unfortunately, in many situations both the state and the market tend to be the cause of problems instead. **Innovative and sustainable solutions can often take the form of community and neighbourhood activities.**⁽⁴⁾ Such solutions are local, shared and coordinated. You can thus get organized with your friends, neighbours or colleagues and draw attention to changes in the zoning plan that are incompatible with climate resilience needs. You can also team up to get affordable organic food, share cars or negotiate greener standards with housing developers. The community approach opens the way to numerous new opportunities and tools that have so far not been fully used. However, everyone – including public institutions and market players – needs to join in the efforts to solve the climate crisis.

Did you know?

- **More than 10,000 mostly European towns and cities, including 21 in the Czech Republic, have joined the Covenant of Mayors, which aims to accelerate decarbonization and improve adaptation to climate change on the municipal level.**⁽⁵⁾
- **It is possible to run an eco-social business.** Instead of striving to maximize profit, such an organization follows social and environmental goals and does business in solidarity with people and the planet.⁽⁶⁾ One of the best-known examples in Czechia is the Slušná firma network.⁽⁷⁾
- **Cities like Bologna⁽⁸⁾ and Barcelona⁽⁹⁾ have introduced policies for citizens' participation and cooperation with the private sector regarding administration and use of the city commons,** including public space, with digital platforms enabling the development of community and neighbourhood activities. The Bologna project motto is "2 + 2 = 5", showing that cooperation is more beneficial than competition.

How to participate in change?

- **Public institutions** (the state, local governments and municipalities) can use powerful climate policies, strategies, investments and incentives to implement fundamental infrastructure measures, and they can also incentivize the private sector to make innovations.
- **Market players** (consumers and producers) can support changes in attitudes and production processes towards a sustainable, fair, local and circular economy.
- **Community, neighbourhood and citizens' activities** are at the heart of the change, as they make it possible for individuals to participate in their neighbourhood or city and influence their surroundings in a coordinated, democratic way – and also influence the approach of public institutions and market players.




Emma and Dan have moved to a new neighbourhood with their parents and grandma. Everything is new, but they are not very happy here.

The illustration shows a woman with pink hair (Emma) sitting on a ledge, looking at a smartphone. A young boy with a yellow cap (Dan) is kneeling on the ground, playing with colorful building blocks. In the background, there is a yellow excavator, a blue building, and a white car. The scene is set during sunset or sunrise, with a large orange sun in the sky.

Why did we have to move here? It's boring. And there's nobody around.

Well, you're right. It's not very exciting here. Mum said it's too expensive, so few people have moved here.



What did you say?

A close-up illustration of Emma and Dan. Emma is on the left, looking towards Dan. Dan is on the right, wearing his yellow cap. They are both looking at the building blocks on the ground. The background is a soft, warm glow.

I didn't say anything.



Let's try and change it, shall we?

The illustration shows Emma and Dan playing with building blocks on a grid. Emma is standing and looking at Dan, who is kneeling and playing with the blocks. A white car is parked in the background. The scene is set during sunset or sunrise, with a large orange sun in the sky.

Hey kids...



Listen, it can't go on like this anymore. Those who are older than you and in power stopped listening to me. So I've decided to talk to you instead. I hope you'll have more courage to help me. Lego building is not enough.

I'm not ready for climate change! I only have few trees and very little water. I'm running out of energy. People are getting lost, and my streets are full of cars and concrete. Everyone is minding their own business and not paying attention to me. You must save me. But don't worry, I'll help you! Just listen to me.



This is just a crazy dream and we'll wake up, right?

Nonsense! We've discovered a magical city!

Threats and plans

2 *How can we plan a fairly-shared city at a time of climate crisis?*

Besides an increase in the global average temperature, climate change manifests itself through more frequent extreme weather conditions. In Central European cities and towns this mostly means **heat waves, droughts and torrential rains** possibly leading to **floods**.⁽¹⁰⁾ However, these extreme weather events do not affect everyone in the same way. Municipalities need to focus on data-based planning, drawing up suitable measures for various groups of inhabitants.⁽¹¹⁾ **Specifically, they need to focus on vulnerable groups** (children, elderly people, people with disabilities or cardiovascular diseases, homeless people etc.). This can sometimes be a problem, as political representatives tend to be influenced by various interest groups – especially citizens with greater economic power and social status. On a really hot day, think of a vulnerable person living nearby (for example an old woman, a child or a single parent with a baby) and try to put yourself in their shoes: walk to the shops, or take public transport to the hospital. What is the route like? Is there some fresh air and cool shade under the trees, or just hot streets?

Did you know?


- **The city of Bratislava recently published the Atlas of evaluation of vulnerability and risks of unfavourable climate change impacts.**⁽¹²⁾ The atlas combines demographic and environmental indicators, and it shows which parts of the city are inhabited by vulnerable groups and are at the same time prone to extreme impacts. It monitors accessibility of social services and healthcare, areas with cooler temperatures, the proportion of permeable and semipermeable surfaces and existing adaptation measures. The atlas explores the vulnerability of citizens, but also the vulnerabilities of transport infrastructure and buildings.



How can we make climate adaptation planning fair and just?

- Focus on both the environmental and social impacts of climate change in the city.
- Involve a team of interdisciplinary experts and local citizens, with the goal of creating a system of technical, environmental and socio-economic measures.
- The measures do not need only to be *smart*⁽¹³⁾, i.e. based on intelligent technologies. Above all, they should be *wise*⁽¹⁴⁾ – environmentally sustainable, energy-efficient and available to everyone.
- Regulations such as zoning plans, and conceptual, strategic and procedural documents need to respond to the climate crisis and deal with its impacts.



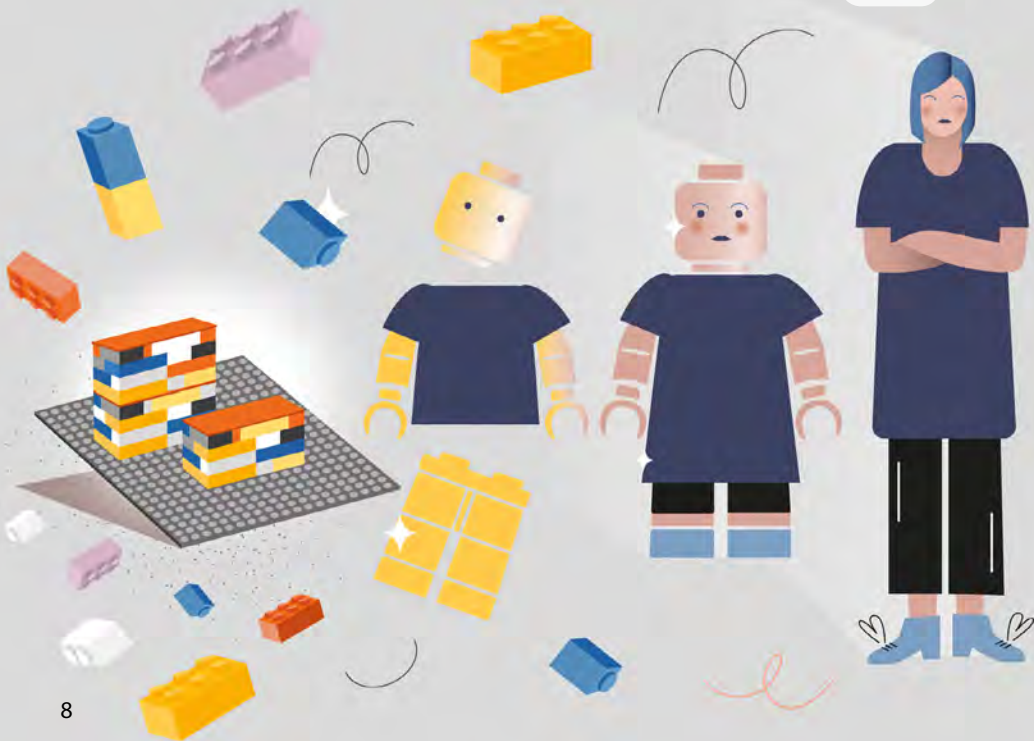



Whether it is a dream or the real city talking to them, Emma and Dan decided to try and do something.

Well, we have nothing else to do anyway. Let's find out what the city's problems are and who is threatened.

And how will we find out?

Wow!





This city won't leave me alone.
Anyway. I am Sophie, a city architect.
You want to learn about the impacts
of climate crisis, right?

Heat waves.

Drought.

Rains and
floods.

This is serious! Some cities around the world
will be impossible to live in. And who do you
think is threatened the most?

Well I don't
know...

Children like you! And
also elderly people, like
your grandma. Not to
mention diseased or
homeless people. And
others will have to leave
their homes because of
climate change.

We really need to
do something!

Restructuring the city

3 *Environmentally-friendly building and housing*

Cities are more susceptible to climate change impacts because of an effect known as the *urban heat island (UHI)*.⁽¹⁵⁾ Temperatures in urban areas tend to be higher than those in the surrounding countryside due to higher levels of evaporation from paved surfaces such as roads or parking lots, roofs, heating of buildings and air pollution caused by traffic and industry.

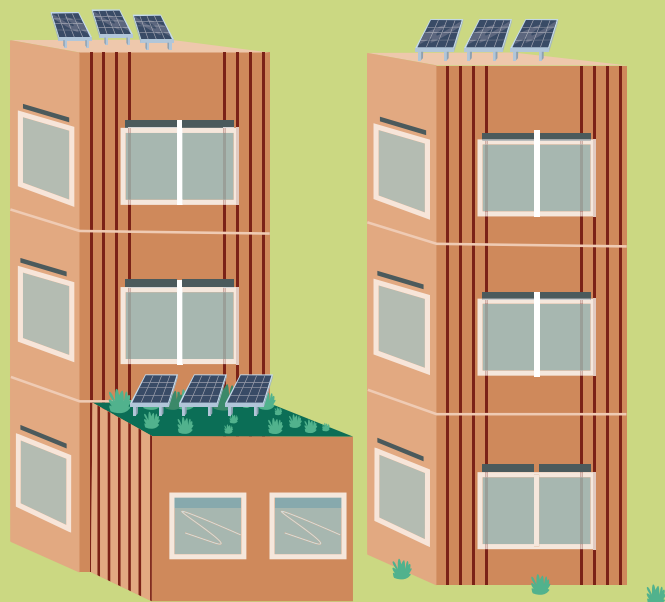
There are numerous measures which can reduce the UHI. Besides the infrastructure that will be discussed in the following chapters, there are **measures related to buildings**. The problem here is that environmentally-friendly construction is not always affordable. Eco-friendly materials are often more expensive than the usual ones, and while investment in energy-saving measures brings a return in the long-term, it may take time. When it comes to housing, decisions are typically based on price and ground area, not the environmental aspects. The eco-friendliness of buildings is thus very closely interconnected with the system problem of housing affordability. If we want to build in a way that is eco-friendly and affordable at the same time, we need to change the status quo – give preference to environmentally-responsible developers and architects, support a mix of municipal, co-operative and rental housing, prevent property speculation and boost citizens' participation in the planning process.

Did you know?

- Vulnerability analyses of various cities show that some of the **highest temperatures are found on large roofs of industrial premises and shopping centres and also public buildings such as schools, hospitals and station concourses** that citizens from vulnerable groups often go to. Also large residential areas tend to experience higher temperatures.⁽¹⁶⁾
- If municipalities want to meet environmental targets, they need to require eco-friendly and energy-efficient development as a housing standard instead of endorsing the development of unaffordable investment residential projects that appear “green” but are only available for a negligible minority of citizens. The overall environmental impact also depends on the purpose and use of buildings. Instead of huge shopping centres with green roofs, municipalities should support local players – small shops and local manufacturers producing eco-friendly goods.
- There is a database with numerous best practice examples of urban and landscape adaptation measures from Adapterra Awards nominees.⁽¹⁷⁾

How can buildings help reduce UHIs?

- **Adaptation measures** – green roofs, green facades, thermal insulation, recuperation systems, water retention, biomass district heating.^{(18), (19)}
- **Mitigation measures** – eco-friendly materials, using buildings for environmentally beneficial activities, use of renewable energy sources.
- **Improved availability of eco-friendly housing** – development partnerships between municipalities, citizens and private investors, a mix of housing units of various sizes, shared infrastructure, modularity.





Look, it's
morphing!

BOOM

CARSHARING

BIKE
SHARING

SDILNA

Someone
pinch me!

Urban gardening

4

How can we reduce waste, grow food, improve the urban microclimate and reinforce community relations?

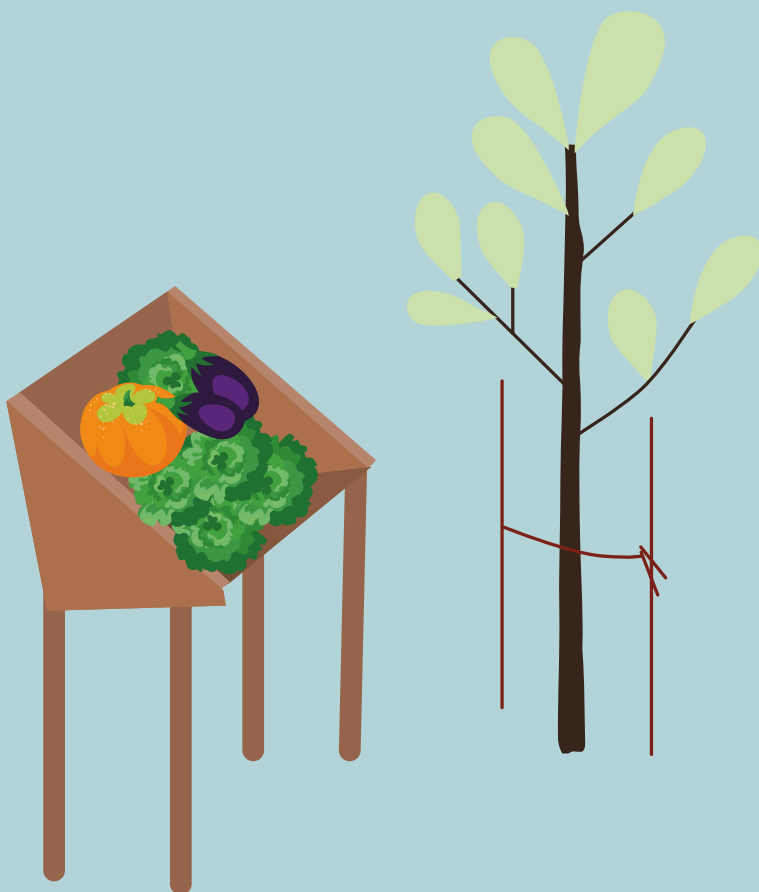
One of the wisest solutions for a climate-resilient city is to **support urban agriculture and gardening**. It offers so much more besides growing one's own vegetables. Up to 60% of municipal waste from households is biodegradable, and it is often compostable, ideal for growing crops in cities.⁽²⁰⁾ Urban gardens are also important for local biodiversity. Local produce furthermore reduces some of the emissions resulting from food deliveries. Other benefits include an improved microclimate and creating shared space for people to meet and share surplus produce. Urban food growing is also a significant element of the circular and local economy.

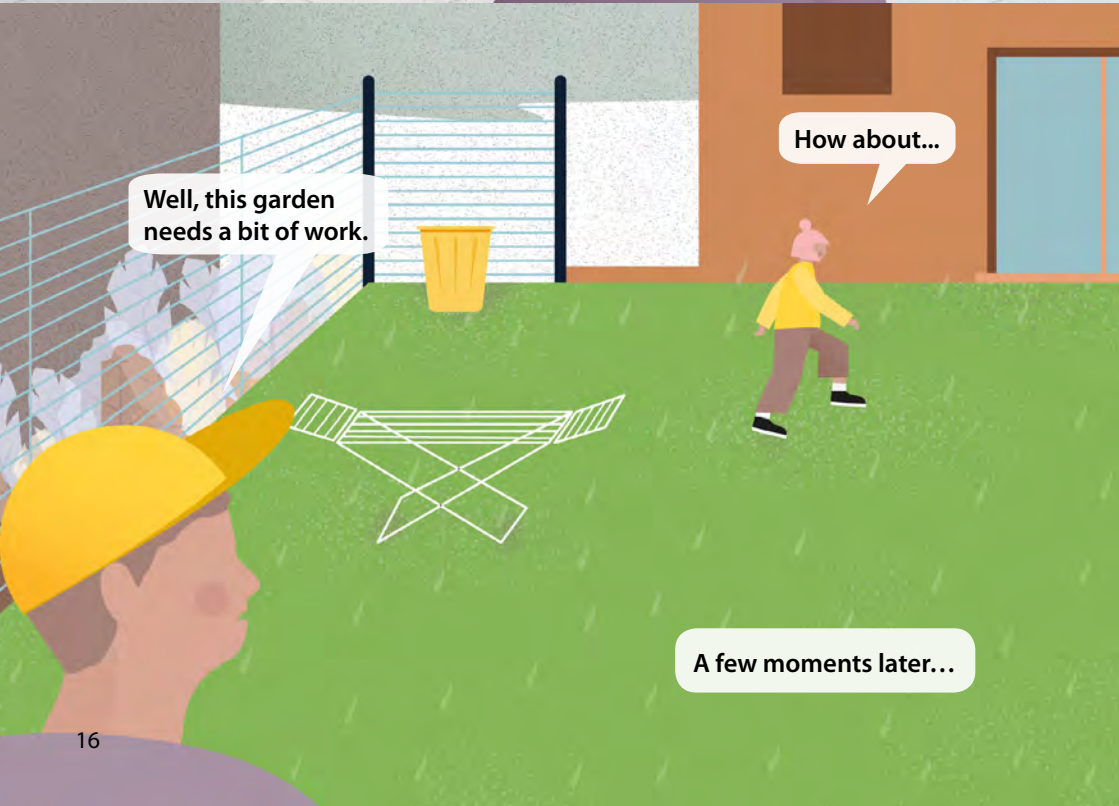
Did you know?

- The Budapest Contemporary Architecture Centre KÉK has been building **community gardens** since 2011. It concentrates not only on environmental aspects of urban gardening, but also on strengthening social integration and levelling out social inequalities.⁽²¹⁾ Community gardens can be made in unexpected locations: for example, the site of the Prinzessinengarten in Berlin was once the concrete floor of a demolished tenement building.⁽²²⁾
- **Traditional allotment gardens are very popular in Czechia.** They often serve as the city's green lungs, and their soil is given continuous care. These large gardening areas located in many urban areas are something of which other European cities could be jealous. However, in Czechia they have often been regarded as anachronism, and many of them have been closed down or threatened instead of being modernized and supported for community purposes.⁽²³⁾
- **The Netherlands focuses on comprehensive development of urban agriculture – for example, the city of Rotterdam has a *Food Cluster* consisting of nearby farms, food processing companies, research teams, creative teams and consumers.** In total, there are 8,000 companies. The cluster develops alternative production processes (such as vertical farms), designs new tools suitable for urban agriculture, and conducts research and development concerning resilient seeds and new systems of food distribution, including software solutions and sustainable logistics.⁽²⁴⁾

What measures can help improve the local microclimate?

- Supporting various kinds of urban agriculture, gardening and a generally more participative approach to caring for the soil and greenery.
- Promoting innovative approaches to food distribution including collective shopping and sharing food within small groups (food co-operatives), community shops, farmers' markets and food banks.







Well done, kids!
No supermarket
tomatoes from
Spain anymore.



And if we have too
many, we can sell
them here.



Such nice
compost!



Yes! And I'll make
seed bombs and
drop them all over
the city!



Among trees and fountains

5 *How can we make cities into blue-green systems?*

Urban areas often suffer because of overly technicist approaches and abundant underground utilities that limit options for planting trees. Another issue is the uniform sewage system which mixes rain water with sewage during heavy rains. In dry weather, on the other hand, street profiles and impermeable materials stop precious moisture from reaching greenery.

Blue-green (and grey) infrastructure is a system which can significantly moderate the impacts of both droughts and torrential rains. It combines major infrastructure interventions with small-scale adjustments of roads, facades or green areas into an interconnected network that defines the streets' appearance and practicality.

Czech towns and cities have also started greening their tram lanes and planting trees in the streets. The more ambitious ones have been recovering greenery in residential areas, renovating waterfronts and making river beds accessible. Municipalities must not be reluctant to invest in system solutions and major alterations of street profiles, residential areas, large green areas and transformation of the sewage system. The blue-green infrastructure must not be seen as an obstacle to technical infrastructure or an expensive non-essential item. It is quite the opposite – vital if cities are to survive. Nevertheless, blue and green also need to go hand in hand with the grey component.⁽²⁵⁾

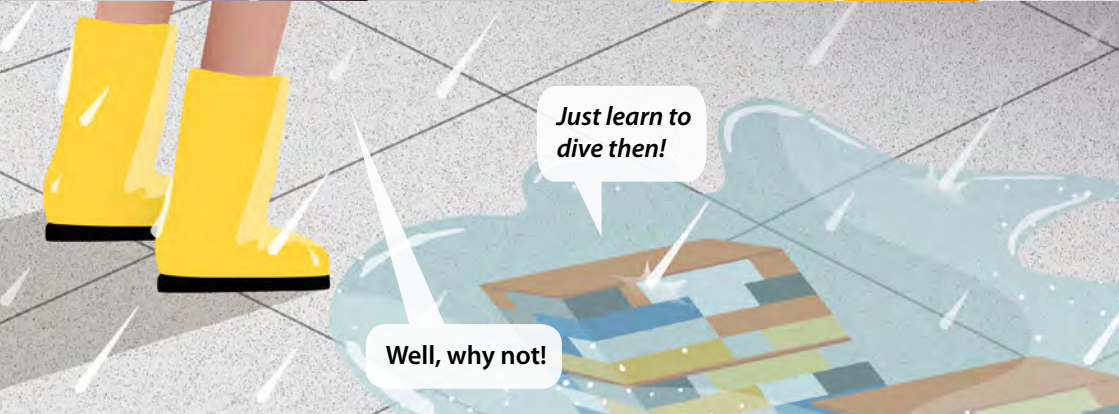
Did you know?

- **The urban environment can be very stressful for vegetation and especially for trees.** Pollution, pruning, road repairs and maintenance, lack of space and water and climate change. Trees in cities used to commonly live to the age of eighty. Nowadays, they often only last for half this time, and the trees we plant in the coming years might have even shorter lives unless we come up with system measures and maximize our effort and care. We might have to replace some currently popular species with Mediterranean ones, and also to start considering other ways of providing shade, for instance pergolas with climbing plants.
- **All around the world, people massively greened their towns and cities in 2020.** In Vienna, the first cooling park was created.⁽²⁶⁾ Paris is planning a pedestrian-friendly green overhaul for the busy Champs-Élysées avenue.⁽²⁷⁾
- **It is ideal to start with blue-green infrastructure development in areas that many people pass through frequently, especially those from vulnerable and underprivileged groups.** The young, healthy and well-off can easily leave the hot city for the forest or mountains if they want to. And people living in houses with gardens can take advantage of environmental comfort denied to those crammed into flats in busy street.

What measures can improve the local microclimate?

- **Existing full-grown trees are the greatest treasures of our towns and cities.** They retain water, provide shade, cool the air, absorb dust and act as a windbreak. This should be remembered in any renovation project. We need to build our towns around existing trees, not to their detriment.
- **A system solution for rainwater management is based on retaining it from paved areas and roofs and bringing it directly to vegetation.** It is then easily available to vegetation and the rest can slowly drain off into the sewers or soak into the undersoil. The water can be purified with specifically-structured substrates. The load on the sewage system can thus be reduced while trees get enough space, moisture and air.^{(28),(29)}
- **There is no need to be discouraged by the complexity of system solutions.** However, it is still true that every bench located under a tree and every shading installed at a bus stop counts.







Wow, it's like
jungle now!

CARSHARING

Sun and wind

6

How can we reduce the town's carbon footprint and develop decentralized energy systems?

We tend to see the energy industry (especially the fossil industry) as a colossus that neither the municipality nor citizens can influence. **The energy transformation** towards renewable energy sources does not mean we can simply switch from one type of energy source to another one. The whole system, with individual producers and consumers, needs to be reevaluated with the goal of reaching carbon neutrality by 2050. Every municipality has its specific way of accomplishing the transformation.

Renewables are a decentralized energy source. They can generate power near the point of its consumption, and acquisition costs for a community power or heating plant are affordable even for towns or villages, small and medium-sized enterprises, housing co-operatives or associations of flat owners. As part of **energy communities**, citizens all over Europe can become active producers of renewable energy which brings them not only appreciable savings, but also cleaner air. Energy communities of citizens can help reduce energy poverty, a phenomenon which threatens low-income households that can face problems paying energy bills and suffering from cold in winter.⁽³⁰⁾

Some people are worried that when the sun does not shine sufficiently, solar panel users will be faced with electricity shortfalls. In order to avoid such risks, **integrated energy systems** will be built across municipalities. They can incorporate hundreds or thousands of small solar power plants on roofs, wind turbines in the surroundings of towns, biomass heating plants, biogas stations, smart metering devices in buildings, charging stations for electric vehicles and public transportation. Individual buildings, blocks or quarters can thus be prosumers – continuously both producers and consumers.⁽³¹⁾

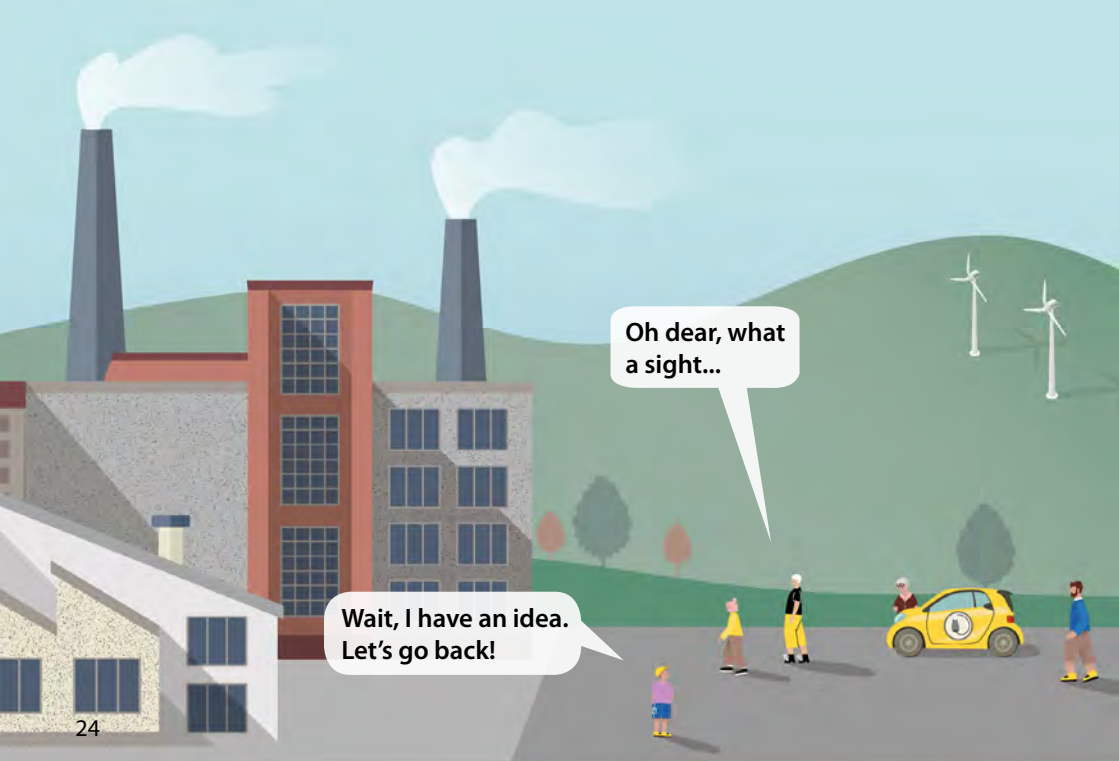
Did you know?

- A sustainable municipal energy system is based not only on power and heat from renewables, but also sustainable mobility and reduced energy consumption (through technical solutions such as improved energy efficiency of buildings and also thanks to citizens' energy savings).
- Integrated energy systems also include integration of buildings and mobility (charging stations), integration of power and thermal energy (heat pumps) and also integration of manufacturing and energy industries (residual energy from production processes).

What measures can support the development of renewables and reduction of CO₂ emissions?

- **Energy mix** – In our latitude and climate zone, we need to develop renewables with the widest possible range of technologies and production modes.
- **Support for cooperation between urban and rural areas** – In most cases, towns will not become net energy producers, and they will still need to use sources from suburban and rural areas. In Czechia this mostly means biomass and wind energy. This brings great opportunities for the development of the regional economy. In exchange, towns and cities can offer not only money, but also partnerships in agriculture or nature and landscape protection. Regional authorities have a major role to play in providing appropriate tools, subsidies and especially guidance for integrated and tailored solutions for individual villages.⁽³²⁾







BOOM

Good job, Dan! Clara,
shall we also install
the biomass boiler?

Yes, but let's go
for a walk first.

Routes and distances

7 *Can you imagine the streets with only a tenth of the cars parked and going past?*

Try to imagine what it is like to move around a city as an elderly person, a child, a parent with a baby or a person with disabilities. **Our cities are predominantly designed for car traffic.** City centres are often depopulated, and services have been typically relocated to shopping zones in suburbs. In the past decades, cars have become an automatic part of our everyday activities. As a result, there are huge numbers of cars in the streets, exceeding the city's capacities. Cars have thus started to restrict many of the city's functions. **It may not be easy, but if we want to live in a climate resilient city, we need to face the problems related to individual car mobility:**

1. Cars produce the largest amount of CO₂ emissions compared to other types of mobility.
2. They take up a large amount of space which could be used otherwise, for example for adaptation measures.
3. Investments in car infrastructure lead to a further increase in the number of cars and thus further limitations of other functions the city might serve.

For urban citizens, there are very few reasons to own a car and park it in front of their block of flats. Examples from cities with the highest living standards show it is possible to adjust the mobility mix in a way that makes the use of one's own car in the city uneconomical and inefficient. It is easy to get to a destination on foot, by bike or by public transport, and in case of need, there is the option of shared cars. Reduced numbers of cars make it possible to turn many streets into residential zones with priority for pedestrians and cyclists and with sufficient space for relaxation, green areas and services. The real breakthrough in terms of quality of life comes with limiting entry for cars into the city centre and creating perfect connections between affordable P+R car parks and other modes of transport. Those who really have to use a car will appreciate the smaller and less frequent traffic jams.

Did you know?


- The city of Vienna motivates people to use cars less **by reducing public transport fares** and by distributing tokens that can be exchanged for free tickets to cultural institutions for each 20 kg CO₂ they reduce.⁽³³⁾
- The Mayor of Paris, Anne Hidalgo, supports the idea of a 15-minute city, making it possible for citizens to reach important infrastructure points within 15 minutes without driving. This approach is also known as a **city of short distances**, or a compact city.⁽³⁴⁾ By 2024, all roads in the city should also be cycling-friendly. It is expected that parking places will be reduced by up to 72% as part of these measures.⁽³⁵⁾

- The city of Dresden has been building **multimodal changing points** and an information system that will make it easier to combine public transport and shared mobility, including bikes, cargo bikes and cars.⁽³⁶⁾
- A special micro depot for logistics companies has been recently opened in Prague. They can use it to deliver goods to customers in the centre on cargo bikes.⁽³⁷⁾

What measures can make a city mobility-friendlier?

- Expand pedestrian and recreational zones across and beyond historical centres.
- Develop transparent and safe infrastructure for urban cycling.
- Support shared mobility, which can help reduce parking places and thus indirectly influence the public space.
- Set car-parking prices at adequate levels compared to public transport prices, or according to the space that is occupied by cars in the city. Offer discounts to households that get rid of their passenger cars, which they once parked in urban areas.



An isometric illustration of a busy urban street. In the foreground, a red car, a white station wagon, a yellow van, a dark grey sedan, and a white pickup truck are parked or moving slowly. In the background, a blue car and a yellow bus are visible. Pedestrians are walking on the sidewalks, and a traffic light is on the right. A speech bubble from a person in the background says, "But our life is not only about our neighbourhood. We need to get to other parts of the city safely and quickly."

But our life is not only about our neighbourhood. We need to get to other parts of the city safely and quickly.

Damn! It would be faster to walk there.

An isometric illustration of a traffic jam. A yellow van is stuck in the middle of a line of cars, including a white station wagon, a blue car, and a dark grey sedan. A yellow bus is also visible. In the foreground, the backs of two people's heads are visible: a man with a yellow cap and a woman with pink hair. A speech bubble from the woman says, "This street needs some freshening..."

This street needs some freshening...



Together, or apart

8

Where can we get money for climate resilience?

With their structures, cities have always been ideal innovation hubs – they are where ideas, needs and information meet. A city is an intersection where surprising connections, new production models and new consumer approaches can develop more easily.⁽³⁸⁾ In cities all over Europe, new types of organizations are emerging – organizations based on people's active participation and the development of new relations between local producers and consumers. We have seen the rise of new food co-operatives, community restaurants, social businesses, Baugruppe communities and energy communities. And then there are various incubator networks, digital FabLabs, shared repair shops and community schools and kindergartens. New economic models bring about a new diversity of roles. We are no longer simply customers and workers. We are becoming members, supporters and volunteers; we are involved in networking, co-ownership, co-operatives and participation. We are learning new skills and knowledge. Part of our working time can be given to local communities and the local economy. Just imagine the difference in sustainability of such diverse economies in comparison with cities whose economy is dependent on one major sector, such as tourism.

Did you know?

- **When money circulates locally, it brings the benefit of a multiplication effect:** One of the key localization principles is the circulation of money in the given area – known as the local multiplier.⁽³⁹⁾ Every crown (or euro) spent on goods or services in your neighbourhood can be used again for another purchase there, which generates higher value for the location. When, on the contrary, we do our shopping in multinational chains, for example, only a very small fraction of the income stays in the location, and profits typically flow away. The concept of the circular economy is becoming increasingly popular – and the circulation of money as a local source is a very important part of it.

Which measures can support development of the local economy?

- **Support for community investments and local currencies** – useful tools supporting local investments include ethical and community banks and platforms (for example the Wealth Pool⁽⁴⁰⁾ in Austria or the Swedish community bank JAK⁽⁴¹⁾) and local currencies (for example the Helsinki Timebank⁽⁴²⁾).
- **Compensation for the carbon footprint in blue-green infrastructure** – Are you worried what happens to the money you paid for offsetting (compensation of carbon emissions)? Will it really be used for planting trees in Amazonia? Municipalities should introduce local versions of programmes supporting offsetting via development of renewables or blue-green infrastructure right in the city.
- **Support for participative budgeting** – citizens of a particular district usually know very well from their own experience which investments are required.
- **Support for open localization** – sharing information, knowledge and experience has a limitless potential. The local economy does not mean isolation from the rest of the world, quite the opposite!.





Emma, Dan and their family have lived here happily for over a year and...

It's great. Using our own renewable energy means we don't pay so much now.

I ride the bike to work! I feel fit and energized.

I like the farmer shop a lot. We can even swap vegetables from our gardens with the neighbours.

I learned how to repair my computer at FabLab.

Living here is so lovely now! People enjoy their free time, go to local shops, cafes and parks to meet up. It's full of life!



Amazing! I'm delighted you like it here, but...

Oh no! I knew it! Now we'll wake up from this dream and go back to that dull place!



Of course not, don't worry. But let me ask for something.



What defines climate resilience and social justice in cities of the future?

1. Participation and democracy on various levels

Citizens' participation should not be limited to municipal elections and providing comments on the zoning plan. Participation is a broad principle which involves a caring, considerate approach to the public space, infrastructure and institutions. It works on numerous levels – in the household, within a block of flats, in one's neighbourhood or quarter. It manifests itself in politics as well as economy – for example in sharing space, services and things.

2. Social and environmental goals as a priority

In evaluations and tenders, municipalities put great emphasis on social and environmental goals. Renovations of infrastructure are based on the needs of blue-green infrastructure as a living network with specific requirements. In development, key priorities include the environmental impact, affordability and quality of life.

3. Carbon neutrality, low environmental footprint, circularity and degrowth

The city of the future aims to reach carbon neutrality and a low environmental footprint as soon as possible. The city's economy must be based on circularity, and it decreases its reliance on economic growth. The city reduces consumption of resources, supports re-use and recycling.

4. Crisis resilience and adaptability

The city is at least partially self-reliant in terms of power, food and basic services. It has active, well-informed, educated and co-operating citizens, responsible companies, good governance and wisely-designed infrastructure.

5. Innovative, but also respectful of the original

The city of the future respects its original architecture and social structures. When planning innovations, the city first re-evaluates social and economic activities, continues with infrastructure renovations, and then dismantles old, inefficient structures with an excessive environmental footprint.

6. Inclusive, affordable, non-speculative, cross-generational, feminist

The city of the future is not exclusively for those who can afford it, for the young, healthy and assertive. All roles are seen as equally important and a good living standard is available for all groups. The most vulnerable ones are given support as needed. The city encourages activities that are not focused solely on making a profit, especially in sectors fulfilling basic needs (housing, food, work, transportation, energy).

7. Developing the local economy, networks and communities

The city promotes development of the local economy. It is shaped by local people and it expands mutual services, uses local resources, supports meaningful work, trust, partnership and solidarity. It is aware of its global responsibility (for example the impact of outsourcing production from polluting plants in the Global South with unacceptable working conditions).

8. Open localization

Localization does not mean autarky. Cities need to cooperate within their metropolitan areas, with rural areas and other cities. Long-distance cooperation (especially across continents) should be based mainly on sharing knowledge and best practice (open-source software) rather than trading goods.

9. Wise use of technology

The city uses up-to-date technologies wisely, especially for communication, sharing (for example surplus produce), energy savings, care for blue-green infrastructure and various analytical activities. Technologies should be affordable and accessible to all groups of inhabitants.

10. New techniques, methods and tools for planning and evaluation

In order to embrace these principles, the sustainable city needs new processes and tools for planning and the evaluation of the impact of adaptation measures and quality of life. New indicators need to be introduced for evaluating the success of development projects or infrastructure quality. There will be numerous key parameters, including cooling or shading potential, food miles and the carbon budget.

Sources:

What does a living, climate-resilient city look like?

1. Climate Change 2014: Mitigation of Climate Change. Contribution of Working Group III to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change (2014), IPCC, Cambridge University Press, Cambridge and New York
<<https://www.ipcc.ch/report/ar5/wg3/>>
2. World Urbanization Prospects: The 2018 Revision, (2019) *United Nations, Department of Economic and Social Affairs, Population Division, New York*
<<https://www.un.org/development/desa/en/news/population/2018-revision-of-world-urbanization-prospects.html>>
3. Climate change: consequences of inaction, *OECD*
<<https://www.oecd.org/environment/climate-change-consequences-of-inaction.htm>>

1 Concern for our shared future

4. *Shareable. People powered solutions for the common good.*
<<https://www.shareable.net/>>
5. *The Covenant of Mayors for Climate and Energy* <<https://www.paktstarostuaprimatoru.eu/>>
6. Pokud jsme solidární s lidmi, měli bychom být solidární také s přírodou. Rozhovor s ekologickou ekonomkou Naďou Johanisovou. [If we feel solidarity with people, we should also feel it with nature. An interview with the environmental economist Naďa Johanisová.] *České sociální podnikání, portál MPSV [website operated by the Czech Republic's Ministry of Labour and Social Affairs]*, 7 May 2019
<<https://ceske-socialni-podnikani.cz/socialni-podnikani/clanky/3054-pokud-jsme-solidarni-s-lidmi-meli-bychom-byt-solidarni-take-s-prirodou>>
7. *Slušná firma. Hnutí za obecně prospěšnější podnikání.* [Fair Company: Movement for responsible and beneficial business.] <<https://slusnafirma.cz/>>
8. *Bologna Lab. Collaborare è Bologna.* <<https://labgov.city/explore-by-lab/bolognalab/>>
9. *Procomuns, Barcola Group.* <<https://procomuns.net/en/>>

2 Threats and plans

10. Katalóg adaptačných opatrení miest a obcí Bratislavského samosprávného kraja na nepriaznivé dôsledky zmeny klímy [Catalogue of adaptation measures to negative impacts of climate change in municipalities of the Bratislava Region], (2016) *Karpatský rozvojový inštitút, Bratislava* <http://www.kri.sk/web_object/761.pdf>
11. *Adaptation Best Practices From The Visegrad Countries* (2017). Energiaklub (Ed.)
<http://www.kri.sk/web_object/831.pdf>
12. Atlas hodnotenia zraniteľnosti a rizík nepriaznivých dôsledkov zmeny klímy na území hlavného mesta SR Bratislavy [Atlas of evaluation of vulnerability and risks of unfavourable climate change impacts in Bratislava, the capital of the Slovak Republic], (2020) *Útvar hlavnej architektky hlavného mesta SR Bratislavy v spolupráci s Prírodovedeckou fakultou UK v Bratislave, Bratislava*, ISBN 978-80-570-2203-9
<<https://bratislava.sk/sk/sprava/v-klimatickom-atlase-bratislavy-je-zhodnotena-zranitelnost-mesta-na-dosledky-klimatickej-krizy>>
13. Jak využít chytrá řešení ve vašem městě? *Ministerstvo pro místní rozvoj České republiky* [How to use smart solutions in your city] Ministry of Regional Development of the Czech Republic] <<https://mmr.cz/cs/microsites/sc/smart-cities/>>
14. Moudrá města. Tvoříme společně města budoucnosti v rovnováze s lidmi i s přírodou. [Wise Cities. Creating cities of the future in balance with people and nature] *Nesehnutí*
<<https://www.moudramesta.cz/>>

3 Restructuring the city

15. Pavelčík, P.; Klápště, P.; Lupač, M.; Třebický, V. (2019): *Města a sídelní krajina ČR v době změny klimatu. Stručný přehled problematiky pro představitele veřejné správy.* [Cities and urban landscape of the Czech Republic in the era of climate change. A brief overview for public administration representatives] Rudná: CI2, o. p. s, ISBN: 978-80-907362-1-4
<https://ci2.co.cz/sites/default/files/souboryredakce/ci2_publikace_mesta_a_sidelni_krajina_a4-web.pdf>
16. Jak zchladit rozpálené město? V Pardubicích se nejvíc přehřívá nádraží, Chrudimka naopak chladí [How to cool down a heated city?], *iRozhlas*, 7. 7. 2020
<<https://pardubice.rozhlas.cz/jak-zchladit-rozpalene-mesto-v-pardubicich-se-nejvic-prehriva-nadrazi-chrudimka-8245551>>
17. Adapterra Awards. Searching for the best practice of adaptation to climate change
<<https://www.adapterraawards.cz/>>
18. Přírodě blízká adaptační opatření ve městech, [Nature-friendly adaptation measures in cities] *CzechGlobe* <<http://www.opatreni-adaptace.cz/opatreni/>>
19. Adaptace na změnu klimatu ve městech pomocí přírodě blízkých opatření. [Ecosystem-based adaptation measures to climate change in urban areas.] *UrbanAdapt*
<<https://urbanadapt.cz/cs/system/files/downloads/publikace-urbanadapt.pdf>>

4 Urban gardening

20. Váňa, J. Koncepce nakládání s komunálními bioodpady v České republice. Biom.cz [Strategy of municipal bio-waste management in the Czech Republic] <<https://biom.cz/cz/odborne-clanky/koncepce-nakladani-s-komunalnimi-bioodpady-v-ceske-republice>>
21. Community gardens & KÉK – Contemporary Architecture Centre
<<http://kozossegikertek.hu/en/angol-oldal-1/>>
22. Návrh brněnského územního plánu ohrožuje budoucnost zahrádek a další zeleně – otevřený dopis (nejen) odborné veřejnosti [Proposal of the Brno Zoning Plan threatens the future of gardens and city greenery – citizens' open letter]
<https://www.petice.com/navrh-brnnskeho-uzemniho-planu-ohrouje-budoucnost-zahradek-_oteveny-dopis_odborne_veejnosti>
23. Rotterdam Food Cluster <<https://www.rotterdamfoodcluster.com/en/>>
24. Prinzessinnengarten <<https://prinzessinnengarten.net/about/>>

5 Among trees and fountains

25. #BlueGreenGrey: Systems for livable streets, *Edge* <<https://bluegreengrey.edges.se/>>
26. Esterházy park, Stadt Wien
<<https://www.wien.gv.at/umwelt/parks/anlagen/esterhazy.html>>
27. Paris's Champs-Élysées will get a pedestrian-friendly green overhaul, *The Architect's Newspaper*, 1 February 2021 <<https://www.archpaper.com/2021/02/paris-champs-elysees-pedestrian-friendly-green-overhaul/>>
28. Jak zmírnit sucho i povodně v jednom? Řešením je modro-zelená infrastruktura, infrastruktura [Mitigating both drought and floods with blue-green infrastructure] *K2N Landscape, Ateliér zahradní a krajinářské architektury*, 15 April 2020
<<http://k2n-landscape.com/2020/04/15/vyznam-modrozeleny-infrastruktury/>>
29. Modro-zelená infrastruktura – vize budoucích ulic [Blue-green infrastructure: envisioning future streets]. *K2N Landscape*. 29 September 2020 (video)
<<https://www.facebook.com/K2N.LANDSCAPE/videos/365548448189398>>

6 Sun and wind

30. Připojte se k výzvě na podporu komunitní energetiky [Join the call for community energy support]. *Frank Bold* <<https://frankbold.org/pripojte-se-k-vyzve-na-podporu-komunitni-energetiky/>>
31. Renewable Energy in Cities, *International Renewable Energy Agency (IRENA)*, October 2016 <<https://www.irena.org/publications/2016/Oct/Renewable-Energy-in-Cities>>
32. Bringault, A., Eisermann, M. & Lacassagne, S. *Cities heading towards 100 % renewable energy by controlling their consumption, Food for thought and action* (2016), Cler, Energy Cities & Réseau Action Climat, November 2016, ISBN: 978-2-919083-09-1 <https://energy-cities.eu/wp-content/uploads/2018/11/publi_100pourcent_final-web_en.pdf>

7 Routes and distances

33. Culture Token – protect the climate and enjoy culture, Stadt Wien <<https://digitales.wien.gv.at/en/projekt/culture-token/>>
34. Yeung, P. How, 15-minute cities' will change the way we socialise, *BBC*, 4 January 2021 <<https://www.bbc.com/worklife/article/20201214-how-15-minute-cities-will-change-the-way-we-socialise>>
35. Reid, C., Every Street In Paris To Be Cycle-Friendly By 2024, Promises Mayor, *Forbes*, 21 January 2020, <<https://www.forbes.com/sites/carltonreid/2020/01/21/phasing-out-cars-key-to-paris-mayors-plans-for-15-minute-city/>>
36. Mourey, T. Dresden, planning for multimodality and measuring the results, *Eltis, The Urban Mobility Observatory* <<https://www.eltis.org/discover/case-studies/dresden-planning-multimodality-and-measuring-results>>
37. Sovák, R. (2020) Cargo kola místo dodávek! Odkud přišla inspirace [Cargo bikes instead of delivery trucks], *Čistou stopou Prahou* <<https://www.cistoustopou.cz/kolo/clanek/cargo-kola-misto-dodavek-odkud-prisla-inspirace-1609>>

8 Together, or apart

38. Boyle, D. (2011) *Ten Steps to Save the Cities The new economics agenda for thriving local economies, the new economics foundation*, July, 2011. ISBN: 978 1 908506 01 6
39. Kutáček, S. (2013), Jak měřit peněžní toky v lokální ekonomice? [Measuring cash flow in local economy] *Deník referendum*, 24 September 2013 <<https://denikreferendum.cz/clanek/16456-jak-merit-penezni-toky-v-lokalni-ekonomice>>
40. *Wealthpool* <<http://www.vermoegenspool.at/eng/how.php>>
41. Carrie, Ana (2004) *How interest-free banking works: The case of JAK*. Growth, The Celtic Cancer. Why the global economy damages our health and society. The Second Feasta Review, Green Books <<http://www.feasta.org/documents/review2/carrie2.htm>>
42. Peltokoski, J., Toivakainen, N., Toivanen, T. & van der Wekken, R. (2017) *Helsinki Timebank: Currency as a Commons*, Community exchange system, 19 October 2017 <<https://www.community-exchange.org/home/helsinki-timebank-currency-as-a-commons/>>

How to Design a City for Life?

8 ways to better adapt to climate change

Published by:

Heinrich-Böll-Stiftung e.V., Prague office
Jugoslávská 16, 120 04, Prague 2, Czech Republic

First issue, April 2021

Contributors:

Data and sources: Jan Blažek, Klára Schovánková, Milota Sidorová, Monika Kertész

Chapters written by: Jan Blažek

Cartoon written by: Ondřej Moravec

Illustrator: Andrea Šafaříková

Graphic design: Kristýna Mothejzíková

Proofreading: Valerie Talacko, Petra Jelínková

Editors: Klára Schovánková, Jan Blažek, Žaneta Gregorová

Translation: Petra Jelínková

Print: Tiskárna Daniel

Special thanks to Nino Lejava and Marc Berthold for their guidance and inspiration.

Quotation: Schovanková, K., Blažek, J., Gregorová, Ž. (Eds.) How to design a city for life? Heinrich-Böll Stiftung, Prague, 2021

ISBN 978-80-88289-30-2

Download for free from cz.boell.org/publikace/mesto-ktere-prezije or contact us for printed copies at info@cz.boell.org.

The work is published under Creative Commons license **CC BY-NC-ND 4.0**.

The publication can be reproduced and used only if it serves a non-commercial purpose and with the condition of citing the authors. No part of this publication may be modified without the prior consent of the publishers.



HEINRICH BÖLL STIFTUNG

The Heinrich Böll Foundation is the German Green Political Foundation. Our main tenets are ecology and sustainability, democracy and human rights, self-determination and justice. We place particular emphasis on gender democracy, meaning social emancipation and equal rights for women and men. We are also committed to equal rights for cultural and ethnic minorities and to the societal and political participation of immigrants. Finally, we promote nonviolence and proactive peace policies. Our namesake, the writer and Nobel Prize laureate Heinrich Böll, personifies the values we stand for: defending freedom, civic courage, tolerance, open debate, and the valuation of art and culture as independent spheres of thought and action. We are an independent organization headquartered in Berlin, yet we are an international actor. We collaborate with 160 project partners in over 60 countries and operate offices in more than 30 countries. The Prague office of the Heinrich Böll Foundation coordinates the Foundation's activities in the Czech Republic, Slovakia, Hungary and Croatia.



Published by:
Heinrich Böll Stiftung Prague
ISBN: 978-80-88289-30-2

