Terrestrial Cities
A GAME TO LEARN ABOUT URBAN ECOLOGY

1. Philosophy

If you could create the ecological city of tomorrow, how would you design it? What initiatives would you choose to transform it for the better?

This game is part of a course in urban ecology called *Terrestrial Cities*. Another initiative, the Climate Fresk, brings awareness to global warming and the need for decarbonization. In contrast, the *Terrestrial Cities* game helps us build ecological lifestyles and habitats at the local and community levels.

2. Starting Point

You are part of a newly elected city council or a citizen board in charge of implementing a program in your city.

At the start of the game, players can decide to focus on a real city—the one where the game is being played, for instance. Otherwise, they can imagine a typical mid-sized modern city: a car-based city with some green spaces.

The time frame of the game is one city council term (or the lifecycle of a community program).

There are 2 rounds, separated by a roll of a die.

3. Goal

Terrestrial Cities is a cooperative card game based on discussion, an exchange of opinions, and idea sharing on how to build ecological community policies.

The game includes 74 cards that each represent a tool or means of action to bring about the ecological city of tomorrow.

At least 4 players are required. Up to 12 players.

Someone should play the role of the animator. The Game Animator's Booklet can be found online (QR code opposite).

The goal of the game is to create ecological policies for a community within allocated budget/time constraints. Players choose cards/tools that they think will further their goals of building a terrestrial city, defined according to the following 5 pillars:

1. POROUS CITY: Circulation of water and living beings

2. NOURISHING CITY: Toward a healthful and local food supply

3. REHABILITATED CITY: Dwelling together in existing buildings and infrastructure

4. PRODUCTIVE CITY: Hands-on work

5. CARING CITY: Invisible infrastructure

(The 5 pillars can help to implement an energy descent. They are described in detail in the course handbook, which can be viewed and purchased online at www.villes-terrestres.org.)

Be careful not to spend your resources on ineffective, cosmetic, or greenwashing initiatives. Try to strike the right balance between desired impacts and cost (budget/time).

Players win if they can flip the 5 coasters from the "Modern City" side (black) to the "Terrestrial City" side (green).
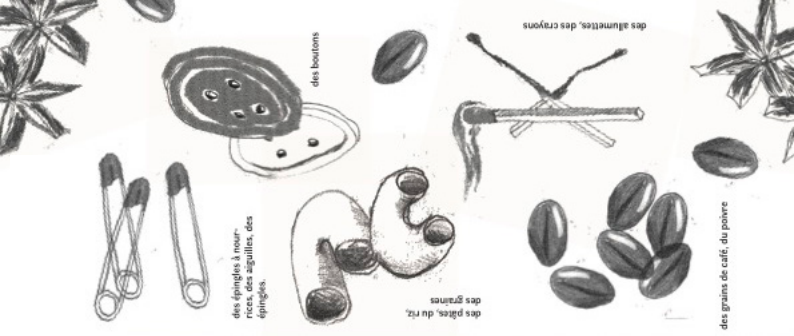
4. Cost and Impact of Each Card

Each card/tool advances one or several of the 5 pillars to a greater or lesser extent. Players can read the text on each card and guess the "score" for the different initiatives. However, only the trainer has access to the hidden score for each card (in the "Scoring Grid" of the Game Animator's Booklet, see below).

The cards have different monetary values (indicated in the upper right corner, from 0.5 for the cheapest initiatives to 4 for the most expensive). Beware: Money does not equal impact, and a very expensive card may not always be very effective. Inversely, an inexpensive card may make a big difference.

des allumettes, des crayons

des boutons

des épingles à nour-
rices, des aiguilles, des
épingles

des pâtes, du riz, des graines

des grains de café, du poivre

5. Required Materials

PROVIDED

- 6+ players: entire set of 74 cards
- 3-6 players: reduced set of 45 cards (only use the cards without the green asterisk in the upper lefthand corner)
- 5 "Modern City/Terrestrial City" pillar coasters

For the trainer
Game Animator's Booklet can be downloaded using the QR code.

ADDITIONAL MATERIALS

- 30-45 tokens to represent time/budget (pasta, cherry pits, hazelnuts, etc.)
- One 6-sided die

6. Setting Up the Game

Arrange the 5 coasters black side up ("Modern City").

Deal cards equally among players.

Place the 15 tokens in the center of the table. These tokens represent the common budget for the first round.

There are 45 tokens for the complete game (74 cards) and 30 tokens for the reduced game (45 cards without the asterisk).

We suggest distributing tokens equally among players (to keep a lively debate).

7. Play

Players spend all their tokens in each round.

Round One

After reading their cards carefully, players select one or two priorities. Players take turns laying down their selected cards and reading them aloud for the group. Everyone is free to comment and briefly discuss the choices (a few minutes). Allow for time to discuss and debate after everyone has shown their priority card(s) (15-30 min., the trainer is the timekeeper). During this time, players can defend their choices. By the end of the debate, players should allocate their tokens to what they think are the best initiatives.

The cards with the most tokens after the debate will constitute the final selection by the municipal council for the first round.

The trainer creates a list of the initiatives chosen in the first round. Using the Scoring Grid applied to each card, the trainer calculates the overall score and gives an overview of the first city council program. The trainer flips over the relevant coasters (if any).

> *Throwing the "Hazard" die*
>
> Hazard can have a positive or negative impact.
> **1. Pandemic:** -1 point for Porous City
> **2. Food shortage:** -1 point for Nourishing City
> **3. Industrial accident:** -1 point for Porous City
> **4. Drought:** -1 point for Porous City and Nourishing City
> **5. The government implements energy descent initiatives:** +1 point for all pillars
> **6. Collapse of the automotive industry:** +1 point for all pillars

Round Two

The second round follows the same rules as the first. Players will make selections from the remaining cards.

8. Conclusion

The term is a success if all 5 pillars get flipped. If some but not all of them are flipped, it's a sign of imbalance; another term of two rounds may be needed.
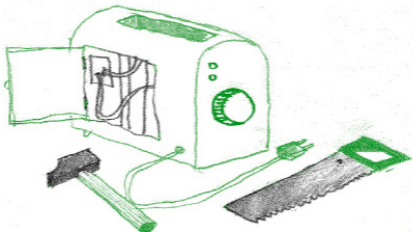
Local Repair Café

Local Repair Café

Electronic devices, small household appliances, toys, furniture, clothing, bicycles, and more. Fixing things is a vital part of fighting against overconsumption and planned obsolescence. Local repair cafés are spaces where people come together to share skills and tools in an environment that encourages mutual aid and learning.

Food Trees Everywhere

There tends to be a preference in urban settings for so-called ornamental trees. When trees need to be replaced or when new trees need to be planted, the community has decided to plant a selection of fruit trees suitable to the streets where they are being planted, the climate, and other site characteristics. Fruit trees mark the seasons. They also offer locals and their children the opportunity to tend the trees and harvest the fruit, providing novel urban experiences and bringing city dwellers closer to the land.
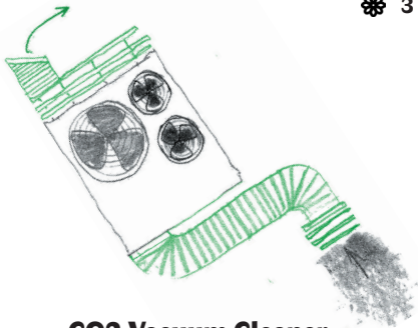
CO2 Vacuum Cleaner

CO2 Vacuum Cleaner

CO2 is the main greenhouse gas responsible for climate change and ocean acidification. It has many sources: power, industry, transportation, agriculture, and more. A CO2 vacuum cleaner is a machine that sucks in air loaded with CO2 on one side and ejects air depleted of CO2 on the other side. The machine can be installed in urban areas with high gas emissions. It runs on electricity.
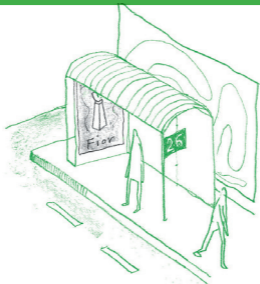
A Ban on Advertising in Public Spaces

With digital displays, commercial and institutional advertising are becoming increasingly ubiquitous in public spaces. In addition to their intrusive nature and the resulting visual pollution, these costly, energy-intensive, and short-lived installations foster a culture of marketing in the public space. A ban on these types of advertisements reduces visibility for commercial products and makes communications and products from local businesses more visible.
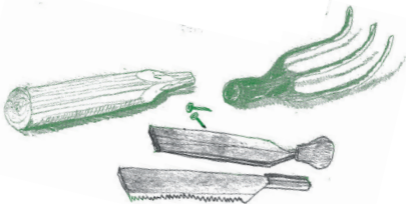
A DIY Shop for Building Farm Equipment

The productivist agricultural model relies on the use of increasingly powerful and high-tech machines that put farmers into a position of financial and technological dependence. The DIY shop is a community space for building farming equipment: hitches, seeders, spreaders, etc. This is one way for farmers to regain technical independence.

✳ 0,5

Authorization for Light Footprint Housing

Tiny houses, yurts, domes, ecolodges, motor-rhomes, mobile homes, cabins, kerterre homes (in hemp and lime), etc. Rising housing costs have encouraged people to look for other ways of living. That, together with the do-it-yourself culture, has given rise to the emergence of alternative and easy-to-dismantle housing solutions. However, these solutions are often stymied by urban planning regulations (related to health, safety, and inspection concerns). Authorizing low footprint housing solutions is a way of encouraging frugal living and experimentation.

✳0,5

Car-Free Days

City dwellers are so accustomed to the ubiquitous presence of the car that they may have a hard time imagining public spaces free of parking lots and roads. For one day, cars are prohibited from driving (except emergency vehicles) on the main roads of the city. Car-free days give us an opportunity to discover a calmer and safer version of our cities.

✱ 0,5

Streets for Kids

For today's kids, the public space is limited to the sidewalk, and cities have become dangerous (even deadly). A "Street for Kids" event involves banning motorized vehicles on a portion of the road, for a day or longer, and setting up activities for children. This kind of event helps build awareness and generate interest in car-free cities.

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Eco-Districts

Inspired by the sustainable and car-free initiative behind the Vauban district in Freiburg (Germany), many private and public figures over the past two decades have been involved in urban development projects known as eco-districts. Housing in an eco-district is energy efficient and constructed from renewable materials. The concept has also become a selling point used to justify further urban growth.
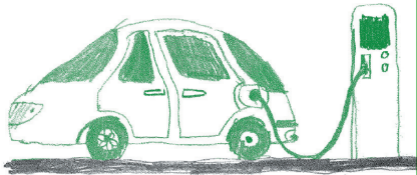
Charging Stations for Electric Cars

Faced with the climate crisis, the global automotive industry has begun a process of converting from fossil fuel to electric. With their batteries and onboard chargers (which can weigh up to 600 kg), electric cars do not emit any greenhouse gases while driving. Municipalities have been installing charging stations in public spaces to support this major industrial shift and keep cars in cities. Charging stations may eventually replace gas stations.

Mechanical Composter
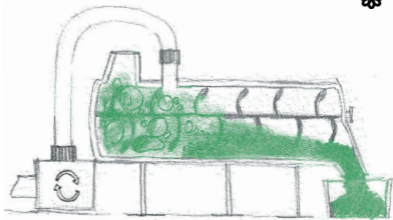
Mechanical Composter

Challenges facing the management of compostable waste in urban settings include a lack of space and time, as well as health concerns (pests). Mechanical composters are tanks measuring a few meters long. They are particularly well suited to city centers. They mix up to 150 kg of bio-waste per day and quickly produce very consistent compost, which can then be used as agricultural fertilizer.

Green Walls and Roofs

Green walls and roofs have been a relatively popular response to the demand for nature in the city. These can involve planters on roofs or modular panels attached to a building's facade. Whatever the form, vegetation on the outside of buildings requires special (sometimes onerous) adjustments, particularly as pertain to watering and substrate maintenance. These sophisticated above-ground designs are subsidized by the city and can offer advantages in terms of insulation and reducing the urban heat island effect.
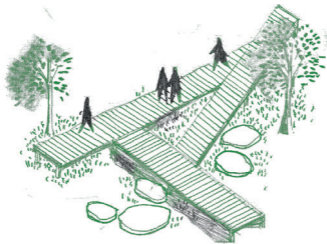
Soil De-Sealing

Soil sealing became synonymous with urban ground cover when the use of cars became widespread. Non-porous ground cover requires constant and costly upkeep that is becoming increasingly mechanized. It also leads to runoff (and therefore flooding). Moreover, it is not conducive to trees or plants. Replacing asphalt and concrete with cobblestones on sand, metal, or wood gratings, and natural ground features (drains, valleys, etc.) helps make the city greener, rooting our feet back on the ground.
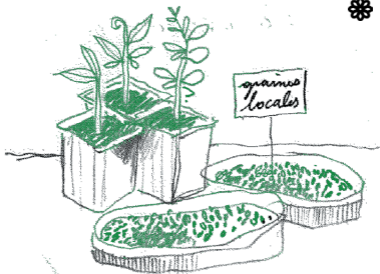
Community Seed Bank

It is difficult for small farmers to operate using authorized seeds (imposed by industrial farming catalogs). Local authorities can support the creation of community seed banks by providing them with land, infrastructure, and aid for marketing and distribution. Creating a network of local seed providers is essential to local organic urban farming.

100% Organic and Local Cafeterias

More and more cafeterias are turning to organic food choices, but organic is still far from the norm. Moreover, the issue of locally sourced ingredients can be overlooked. Adopting a policy of 100% organic and local cafeterias is a way for communities to support the local economy and provide children with more nutritious and better tasting foods. Such policies therefore promote better health.
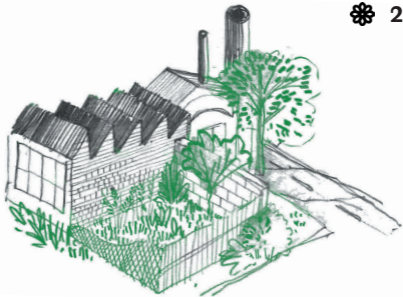
Installation of Factories in Urban Wastelands

As part of a movement to bring manufacturing back to a local scale, more and more companies seek to set up production sites near urban areas. Local authorities can encourage the installation of factories in their cities by listing and making abandoned infrastructure available. This kind of initiative can contribute to a neighborhood's vitality and the area's economic prosperity.

Natural School Playgrounds

Over time, school playgrounds have all become paved landscapes, which has several disadvantages: a dry environment that is dangerous when kids fall, a lack of vegetation, heat islands, etc. A natural playground features many trees and loose, permeable ground cover (packed earth, wood chips). It is a setting that can accommodate all manner of spaces and structures. It can also include vegetable gardens and compost bins.

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Urban River Restoration

Over the past two decades, cities have been rediscovering their rivers (which had been turned into sewers and then re-engineered). These large-scale urban initiatives are multipronged, including: debushing, remediation, restoration, park creation, etc. Restoring rivers is a true urban initiative that supports the creation of green corridors, provides new green spaces, cools the air, reduces the risk of flooding, opens up soothing leisure spaces, and more.

Bicycle Counters

It is not always easy to assess the impact of bike infrastructure. Bicycle counters can be installed on mixed-use roads, bike lanes, and cycle paths to count the number of cyclists on a given corridor. These counters collect and communicate data in real time on bicycle mobility in the city.
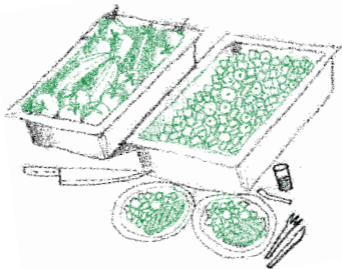
Fresh-Cut Produce

Washing and cutting are important steps between when produce is harvested and when it arrives for use in cafeterias. Processed foods are often used to save time. Fresh-cut purveyors are specialized in washing, peeling, cutting, and portioning vegetables. They are a link between produce production and the kitchen. They facilitate the use of local produce in cafeterias and other municipal eateries.

Fine-Grain Pedestrian Network

For decades now, most urban and peri-urban spaces have been designed for cars, and they are fragmented by transportation infrastructure (roads and railways). The result is an inhospitable space for walkers. A fine-grain pedestrian network forges or restores continuous walkable spaces using different crossing strategies: crosswalks, footbridges, tunnels, etc. Large enclaves are eliminated, and pedestrians can get around without having to take detours. Permeable pedestrian experiences improve efficiency and quality of life in a neighborhood.

Local Farmers' Markets

Local Farmers' Markets

It can be difficult to find affordable, locally grown produce in a city. A farmers' market is a place where people can buy organic produce directly from local farmers. It reconnects city dwellers to small-scale farming and directly supports local farmers. Reviving older forms of produce markets also has a positive effect on the business and social life of a neighborhood.
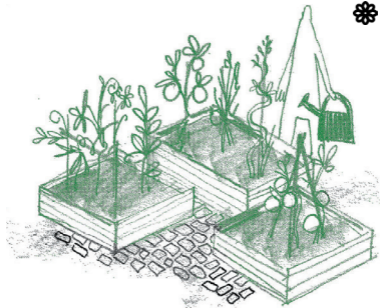
Community Gardens

Food resilience in local communities relies on different forms of urban and peri-urban agriculture. Community gardens are located in city neighborhoods and can contribute to the goal of local food production. A city that makes land available for community gardens helps foster a sense of community and a return to farming in the city.
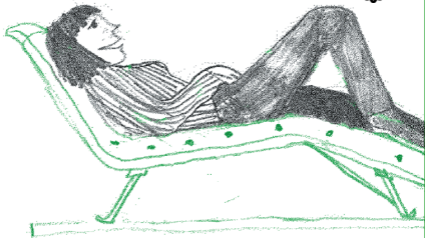
Free Mental Health Services for All

This is a cruel world! Not many of us have never experienced anxiety, phobias, or depression—often linked to painful life stories. Mental health services are not generally covered by public health programs, and access to psychologists tends to be limited to a small subset of society. Mental health services for all would make seeking help less taboo and undo toxic behavior patterns, which have repercussions on all of society.
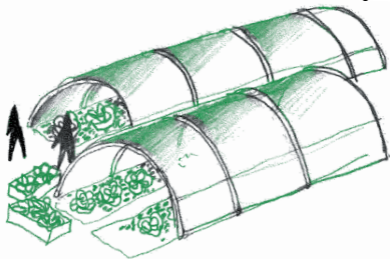
Test Farms

Before the industrialization of agriculture, cities were surrounded by a ring of agricultural space. Test farms involve making land and agricultural space available to encourage the creation of new local farm initiatives. Technical, legal, and business support are also provided. Test farms function as incubators for new urban farmers seeking to supply local markets.

Ban on Hypermarkets

A go-to model in many communities, hypermarkets are part of a dying and dangerous system (dependence on cars and transportation chains, flight out of city centers, overpackaging, etc.). A ban on hypermarkets (through restrictions on square footage of commercial spaces) can help promote the return of small business and social vitality. Deserted buildings in commercial areas can be converted into factories.
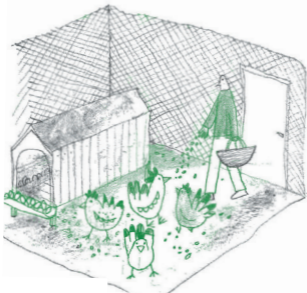
Community Chicken Coop

Most families in urban settings do not have a garden. A community chicken coop houses ten to twenty hens in a public housing project yard or in a city park. It can be managed by a public employee or volunteers. Locals who come to deposit their food waste (in a community compost) can leave with fresh eggs. A community chicken coop changes the atmosphere of a neighborhood and serves an educational purpose for children and their parents.
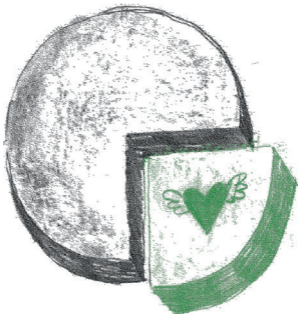
Participatory Budgeting

Participatory budgeting, which is still a rather marginal practice (a few %), involves citizens in community decision making. Local people are consulted as authorities on their community during proposal and adoption phases. Cities that allocate a larger share of their annual investment budgets to participatory budgeting make their cities more democratic.

Library of Things

Library of Things

Many of the things we own are not used every day. Creating a library of things for the city's different neighborhoods lets locals borrow things they need from time to time: household appliances, sporting goods, DIY tools, and more. This new initiative strengthens ties within the local community, changes our relationship to consumption, and invites us to create a community culture of technical independence.

Benches, Toilets, and Shade on All Streets

For years now, public spaces have been designed to encourage circulation along consumerist and often defensive lines. Mechanisms to fight homelessness, promote security, and place other limits have increasingly restricted street use. Using inclusive urban facilities and reinstalling benches, toilets, and areas for play, shade, and rest can have a real impact on the community life of a city.
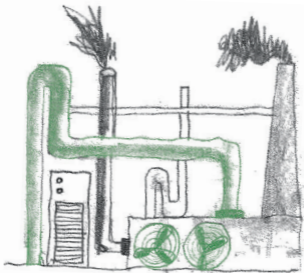
District Heating Network

The vast majority of heating systems are individual. An urban heating network is a centralized system for distributing thermal energy via pipes. It operates from a boiler plant or by recovering energy losses from industrial activities: cooling water from thermal power stations, heat from data centers, waste incineration, heat from wastewater, etc. This type of urban industrial facility requires large-scale infrastructural means.
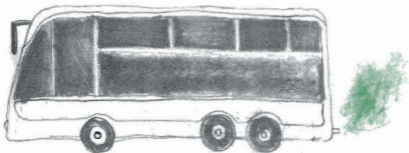
Fuel Cell Bus

Fuel Cell Bus

Although their impact pales in comparison to personal cars, buses with internal combustion engines emit polluting gases and fine particles. Electric fuel cell buses only emit water vapor. Electricity is produced directly aboard the vehicle, from hydrogen, thanks to an on-board fuel cell. This industrial hydrogen is generally produced from natural gas.

Ban on Toxic Household Products

Household products are composed of substances that are dangerous for human health and the environment. They pollute indoor air, outdoor air, water, and soil when released into wastewater. Banning them encourages people to use all-natural cleaning products (which can be produced locally): vinegar, baking soda, black soap, Marseille soap, lemon, blanc de Meudon, etc.

Free Public Transportation
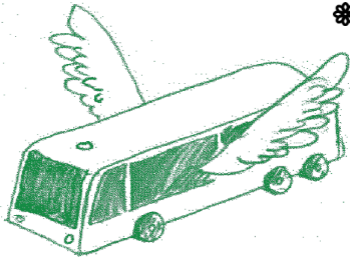
Free Public Transportation

Ticket sales for an urban transportation system represent between 15% and 35% of the system's budget. There is also a cost related to selling tickets and monitoring compliance. Making public transportation free is a way of encouraging motorists to use their cars less often, particularly in cities where traffic is relatively light and traffic jams are not much of a concern.

Mandatory Packaging Deposit
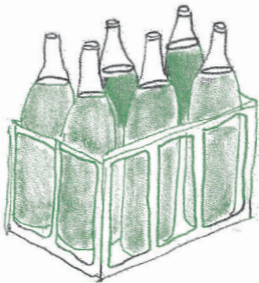
Mandatory Packaging Deposit

We have been throwing away nearly all of our packaging for several decades (only a small portion gets recycled, and at a high energy cost). In a deposit system, a market value is assigned to packaging. And a small sum is returned to buyers when they bring back empty packaging to the point of sale. Making this system widespread helps drastically reduce our need for plastic and cardboard and minimize waste of these materials.

Compensation for Artificialized Land

Cities have sought to limit their ecological impact for decades, even while pursuing urban growth. To counteract initiatives that artificialize new lands, other spaces are protected or restored elsewhere. A space teeming with biodiversity can thus be turned into urban space. In return, an industrial or agricultural wasteland can be restored.
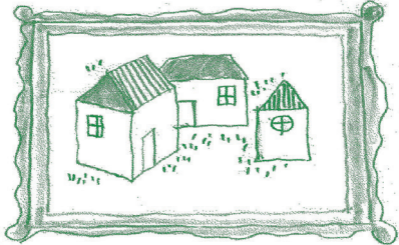
Rent Control

Speculation is a feature of the rental property market, which represents an investment for some and a vital need for others. Rent control involves prohibiting landlords from increasing the rent between two tenants beyond a certain percentage. This type of scheme prevents soaring rent prices, limits excluding the most vulnerable in our communities, and encourages social diversity.

la fertilité des sols

Agroecology in Schools

Teaching Agroecology in Schools

Ignorance about agriculture by most city dwellers is an obstacle to goals of developing urban farming and food independence. Introducing basic units on agroecology in schools (vegetable gardening, soil dynamics, permaculture, etc.) helps children—and their parents—learn. As a result, children may want to go to a community garden on weekends. And perhaps later on, they will become part-time farmers.
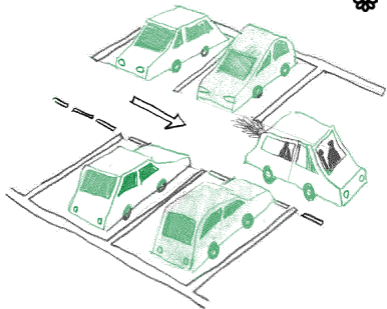
Carpool Zone

Most motorists are alone in their vehicles for their daily commutes. Carpool zones are parking lots for carpool passengers and drivers. They can be located at the entrance to the city and near major roads or interchanges. Passenger carpoolers can park their cars here before meeting with a carpool driver.

Misting Systems

As summer heat waves proliferate year after year, urban heat islands have become a new norm. Misting systems can be installed in public spaces, sending fine droplets of pressurized water into the ambient air. These systems should be placed in high impact areas (playgrounds, bus stations), where they can provide people with temporary relief from the heat.

Eco-City Audit

Eco-City Audit

Green labels help achieve several goals for cities: publicizing exemplary sustainable development initiatives, promoting initiatives in national rankings, and spreading good practices. The city can obtain an eco-city label subsequent to an audit into its public policies by a specialized rating agency. One upshot of this label would be to boost the city's attractiveness.

Power Production Cooperative

Local Power Production Cooperative

The power consumed in a given area is not generally produced locally. It comes from a grid, into which energy is injected. But there is little visibility on where that energy has been produced or how (fossil, nuclear, or renewable sources?). A local energy cooperative aims to foster the energy transition and achieve local autonomy through its own green energy sources: solar panels, wind turbines, geothermal energy, hydropower, etc.

Rainwater Infiltration

Private Rainwater Infiltration Systems

Water that does not seep directly into the ground is channeled through gutters into the stormwater drainage system, rushing into the nearest river. To promote the direct infiltration of rainwater, the community encourages property owners to create systems of valleys, sumps, and drains on their plots. This can help reduce swelling waterways and flood risks.

Requisition of Vacant Housing and Offices

More and more buildings are being built on the outskirts of cities due to a chronic shortage in the housing supply. However, many buildings are vacant. By requisitioning vacant properties, the community can acquire ownership or use of unoccupied real estate (in return for compensation). These properties can then be used for different activities: rental accommodations, emergency accommodations, shared offices, public service offices, etc.

❀ 1

Community-Supported Agriculture

Community-Supported Agriculture

In our world of industrial agriculture, where food prices are set by supermarkets, small farmers struggle to survive. Community-supported agriculture has opened up a space of resistance, selling fresh, local, and seasonal produce directly to consumers. These initiatives follow two simple rules: 1) the price of foodstuffs is based on the farmer's salary (as opposed to international markets) and 2) production is paid for in advance.

❋ 2

Local Agricultural Procurement
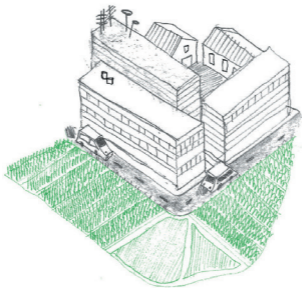
Local Agricultural Procurement

Local authorities, like any average customer, are generally supplied by the private market for their food purchases. In a local agricultural procurement scheme (city-run or in cooperation with multiple cities), the community hires a farmer directly to work a parcel of land that it generally owns. The fresh fruits and vegetables can be used in school cafeterias, daycares, and other city eateries.

Agricultural Protection Zoning

Urban sprawl gradually encroaches into agricultural lands, posing a threat to the ecological equilibrium and food stability of an area. The inclusion of Agricultural Protection Zoning in municipal planning documents helps limit this phenomenon. APZ is a tool to sustain and preserve agricultural lands in order to protect their use for farming.

*

Third Places

Local authorities have been increasingly supportive of experimental spaces in vacant urban buildings (temporary or permanent vacancies) that combine different functions (company headquarters, bars, receptions, etc.) and activities (cultural, celebrations, get-together, co-working, etc.). These open, welcoming, atypical spaces lend themselves to social mixing, play a role as business incubators, and help foster cultural and social action initiatives.
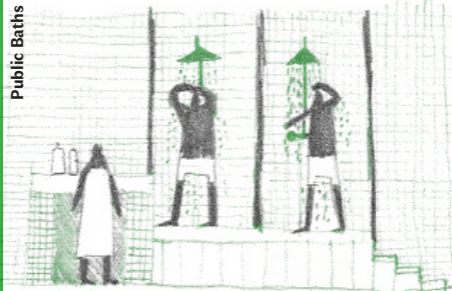
Public Baths

Public Baths

Hammams, saunas, temescals, Japanese sentō, Hungarian thermal baths, to name a handful. Public baths are an age-old institution that is still alive in many countries. They have almost disappeared in the West as private bathrooms have become widespread. Free public baths promote well-being and social interaction in a neighborhood, cutting across class divides.
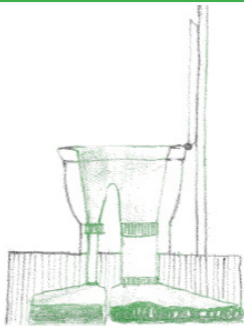
Dry Toilets in Schools

A single flush wastes three to twelve liters of drinking water, not to mention the significant cost for the community. Replacing conventional toilets in public schools with urine-diverting dry toilets saves water resources. This system also allows urine to be reallocated to agriculture as a natural fertilizer (just as the world's phosphate reserves are running out).
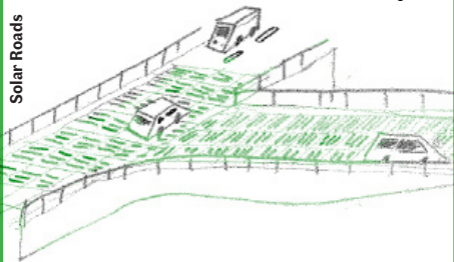
Solar Roads

Solar Roads

Developing renewable energies will require vast quantities of space, even as we search for ways to reduce soil artificialization. Solar roads replace pavement on roads with photovoltaic panels that are designed to withstand car traffic. This high-tech solution requires high investment costs in road modernization and high long-term maintenance costs due to the fragile nature of the technology.

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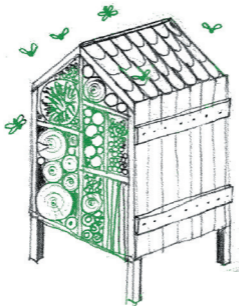
Insect Hotels

An estimated 80% of insect populations have already disappeared from the surface of the Earth due to pesticides from industrial agriculture. Insect hotels are small structures made of wood, bamboo, reeds, bricks, straw, etc. Their guests are insects, and their purpose is educational. It is difficult to measure the impact of insect hotels, but they help raise public awareness about biodiversity.

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30 km/hr Speed Limit

Reducing the speed limit to 30 km/hr in the city would improve traffic flow and make the roads less dangerous for pedestrians and cyclists. The measure would be easy to implement, and it would help prioritize pedestrians and alternative modes of transportation. Bonus: in some countries, traffic regulations allow bicycles to ride at 30 km/hr in the opposite direction on one-way streets. If the speed limit everywhere in the city is 30 km/hr, then bikes can go anywhere.
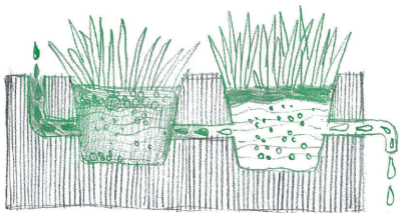
Phyto-Purification Station for Wastewater

Conventional wastewater treatment plants pose many problems: high energy consumption, untreated nitrates, phosphates, viruses, and microbes. Phyto-purification treats wastewater using plants, substrates, and micro-organisms within an artificial wetland. The infrastructure is less expensive and less impactful on the landscape.

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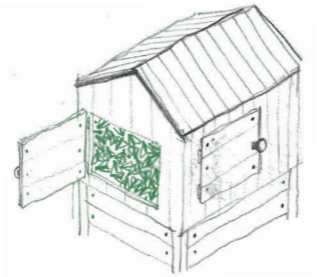
Educational Beehives

City dwellers, aware that the world's bees are endangered, enthusiastically embrace urban beehives. Educational hives are generally installed on rooftops; they are tools for building awareness about the city's micro-fauna. Honey can be given away or sold to promote the city's garden spaces. Pollination by farmed bees cannot be verified. They may be in competition with wild bees and other natural pollinators.
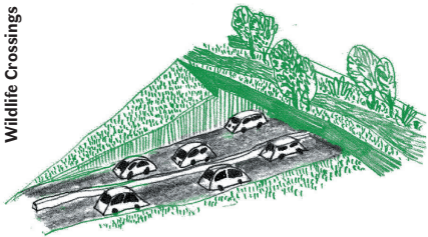
Wildlife Crossings

Roads, expressways, and railways fragment animals' habitat lands. Wildlife crossings are tunnels or bridges that facilitate the movement of small- and medium-sized wildlife on opposite sides of transportation infrastructure. They help reconcile the need for ecological continuity (green and blue corridors) and mobility, particularly for cars.

Metropolitan Trails

Urban landscapes have expanded considerably over recent decades, becoming less and less amenable to walking, such that we have now lost touch with the cities in which we live. A metropolitan trail is a hiking route that allows urbanites to rediscover their city (its resources and problems), better familiarize themselves with the place they live, and imagine its future.

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Birdhouses

Industrial agriculture has led to the catastrophic disappearance of birds around the globe. As urban landscapes expand, changes in environmental regulations and increased awareness have led people to care about birds in the city. Birdhouses are small habitats that can be installed in gardens, parks, or balconies. They help nesting birds (sparrows, chickadees, and swallows) survive in urban areas.
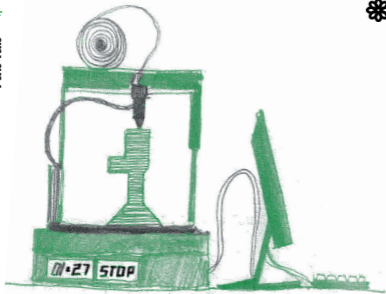
Fab lab

Fab labs, which have proliferated over recent years, are an outgrowth of the hacker and free software movement in reaction to industrial culture. A fab lab (fabrication laboratory) is a space where tools and computer-controlled tools are made available to the public so people can design and produce all manner of objects: bicycle trailers, eyeglass frames, children's toys, furniture, etc.

Reuse Center for Building Materials

The building sector consumes a colossal quantity of decreasingly renewable materials at the same time as it produces more and more waste. Reuse is a way of reimagining building waste as raw materials (tiles, carpet, plasterboard, wood, etc.). The reuse center would be a local space where building materials from nearby demolition sites could be itemized, stored, and made available for future use.

Helping Tradespeople
Return to the City

The ubiquitous presence of shopping centers and their flimsy goods sourced from all over the world has led to the demise of many tradespeople in downtowns. Local authorities can encourage their return by, for instance, capping rents on commercial spaces. This would make city life on the ground more community-oriented and provide locals with a range of repair services (bicycles, electronics, etc.) and small-scale production (printing, sewing, carpentry, etc.).

Urban Logistics (last kilometer)
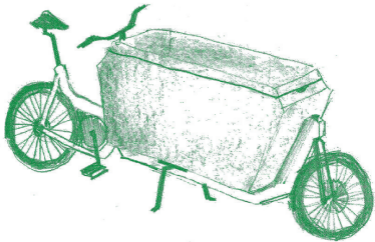
Urban Logistics (last kilometer)

Delivery trucks transport personal packages, goods from shops, food for restaurants, and more. At some times of the day, they can occupy up to 20% of the road. Delivery of goods within the city can be done using cargo bikes—a silent and pollution-free last kilometer solution.
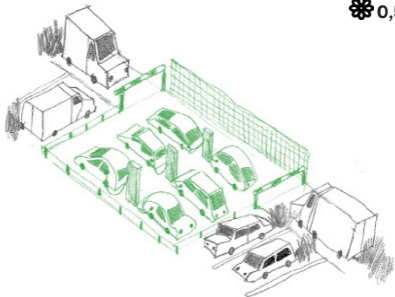
Low Emission Zone

Low Emission Zone

In many cities, motor vehicles of all types are generally permitted, which makes cities prone to spikes in pollution. Low emission zones are areas where some vehicle categories are restricted during certain times of the day. This scheme helps reduce the number of high polluting vehicles driving within the city and improve air quality in the most polluted and dense areas.
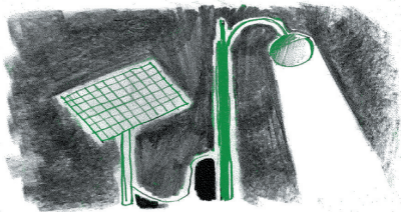
Dim Street Lighting

Almost half of a local community's power bill goes to street lighting, and a large share of streetlights are obsolete. In our over-lit cities, light pollution hinders the movement of nocturnal species (butterflies, glowworms, owls, bats, etc.). Reducing and optimizing street lighting can create savings, help ecological corridors thrive, and usher back starry nights in the city.

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Dim Street Lighting

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Smart Waste Bins

Waste management can be made more efficient if we use new digital tools at our disposal. Smart waste bins store and compact waste, and they inform garbage collectors when they are full and ready for collection. This promising technological investment would optimize truck rounds. However, it would not reduce waste, and it would create new costs and tasks, particularly in terms of maintenance.

Bicycle Highway

Crowded public transportation, gasoline prices, and urban congestion have made bike use increasingly popular. Bicycle highways are continuous paths that connect key points in urban areas. They promote cycling and prevent users from having to ride alongside motorized vehicles. Bicycle highways require extensive and costly infrastructure.

Bike Lanes on Every Street
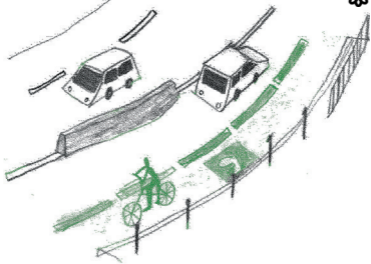
Bike Lanes on Every Street

Even though there is a growing enthusiasm for cycling, urban roads are still laid out primarily for cars. As such, bicycling is still dangerous, especially for children. To really prioritize bicycles, the city can implement a simple rule, one that does not require major construction: all lanes are bike priority lanes, regardless of their width. This would make streets calmer and generate demand for an end to cars in the city.
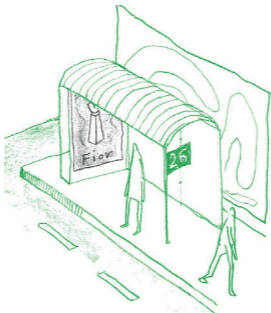
Tram System

At the beginning of the twentieth century, most major Western cities had a dense network of trams. Largely dismantled by advocates for the automobile, the tram is now making a comeback in our cities. Setting up a tram system requires significant investment and operating costs. Trams encourage social mixing and lead to calmer streets. An investment in a tram system would be in line with alternative transportation modes and would help do away with cars in the city.

Communal Housing

Private homes have been the norm in Western countries, but now we are beginning to see the emergence of communal housing: student or intergenerational roommates (shared housing), shared real estate projects (cohousing), and more. The city can encourage this social trend through the purchase and provision of buildings, regulations against the excessive division of housing, etc. These types of communal living quarters help save on materials and energy.

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Bioasphalt

Millions of tons of asphalt are laid every year in Europe. As an alternative to oil-based asphalt, bioasphalt is created from natural products (including food): sugar, rice, starches, resins, vegetable oils, micro-algae, etc. The production of these raw materials requires vast agricultural space and considerable processing.

Community Food Processing Kitchen

To gain food independence, people also need to relearn how to manage occasional agricultural surplus and slack periods. A community food processing kitchen is a place where people can learn how to preserve produce (jams, lacto-fermentation, pickling, etc.) and have access to the materials to do so (jars).

Bike Route App

It is not always easy to find good cycle routes in cities that have been car-oriented for decades. This smartphone application helps cyclists find efficient and safe routes through the city, notably that avoid dangerous roads and crossings.
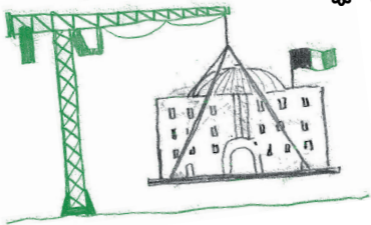
Renovation of Public Buildings in Straw and Mud

Many public buildings are energy sieves. A thermal renovation of these buildings would save money and energy. Instead of energy-intensive industrial solutions (polystyrene and glass wool), straw and mud are now the preferred materials. Straw is an abundant material. It provides excellent insulation and also regulates humidity well. These renovations will also support the development of the straw and mud sectors.

Implementing Bioregional Mandates

Globalization has killed local manufacturers with its cheap, low-quality goods. Cities can implement a new tax as a way to foster local manufacturing. A bioregional mandate would tax goods from remote sources as luxury items. A revival of this old order practice would also help decentralize the economy of goods and strengthen local economic prosperity.