4 A Mindshift Towards Futures Resilience and Anticipatory Urban Governance

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Introduction

> The road you take just forces you ahead, open snow fields let you choose your way.
> Aaro Hellaakoski (1946)[1]

How can futures be read, and how can we strengthen our 'futures resilience'? These are the cornerstones of futures studies and utilizing futures research in decision-making. Futures literacy refers to the ability to create and utilize systematic foresight information for present decisions (Miller 2018; Poli 2021; EFP 2023). This general ability would be useful for specific fields and purposes, for example, there is a need for urban planners to become more futures literate (Toivonen et al. 2021). Riel Miller (2018), who has anchored foresight work at UNESCO, has emphasized the ability to identify the potential futures inherent in the present moment – the role of detecting and understanding emergence. However, it is important to deepen this futures literacy to the next level, transforming it into futures resilience. By futures resilience, we mean the ability to survive crises, to anticipate crises, to navigate and learn from them, as well as the ability to renew one's activities, which emerges through this process. Futures resilience is not only about bouncing back and slipping back into the old state but fundamentally about assessing the situation, learning, renewing, and strengthening the focus on the future.[2]

We are living in a time of profound uncertainty. This profound uncertainty that affects the future stems from anticipated changes in climate as well as technological and socio-economic transitions already in motion, which implies that it is not enough to simply make 'best-guesses' about the state of the future (Maier et al. 2016). However, this is not new in the history of humanity (Nowotny 2015). Throughout history, the future has always contained significant uncertainties. Whether in the Stone Age or the Middle Ages, the mere survival of human life was constantly uncertain. Yet now, we have entered an era where uncertainties deepen, complexity grows as systems become more intricate, and the web of interdependencies and interconnectedness tightens its grip. For the first time in human history, we are now on the 'precipitous' edge (Ord 2020; Heinonen 2021d;

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Heinonen et al. 2022a), facing numerous existential risks. Ord argues that safeguarding the future of humanity is the key challenge of our time. Problematically, humanity lacks the maturity, coordination capability, and foresight expertise to avoid making mistakes from which we cannot recover. According to him, what we need above all is an ethical perspective: a re-evaluation of how we see the world and our role within it.

Preparing for the future must be continuous. It is not about isolated projects or concentrated efforts but a systematic, ongoing process of conscious and internalized awareness – an ongoing 'foresight mode'. This involves both mental and concrete preparation for what is to come. Cuhls (2016) speaks of mental time travel, and an active consideration of multiple futures. Successful preparation for the future, in turn, requires having tools and techniques, in other words, technologies, instruments, and methods that allow us to prepare for the future and any crises that come with it. Equipping for the future is the technical apparatus of mental preparedness, with the necessary knowledge, skills, and associated techniques.

The concept of futures resilience is introduced to emphasize the importance of foresight as a central component and characteristic of both futures literacy and resilience. In uncertain times, what matters is how we approach uncertainty. Uncertainties can never be completely dispelled, so the critical aspect becomes accepting them and having the capacity to face them. The goal is to avoid panicking or being paralyzed by uncertainty. Former President of Finland Mauno Koivisto once advised 'not to be provoked when provoked'. In the spirit of futures resilience, we encourage not panicking, even as crises tempt us, like sirens, to do exactly that. Futures resilience is not just about individual resilience but also a collective ability – about the sustainability of communities or networks (Rashidfarokhi & Danivska 2023). In becoming futures resilient, leveraging the resources of the entire network is worthwhile. The power of the community is important in any society, and harnessing it is a force through which we overcome crises.[3] When pondering the role of built environment in either improving or decreasing resilience of individuals and communities our aim is to draw attention to the dynamics of this interaction.

This chapter explores the concept of a futures-resilient city and how decision-makers should change their thinking to achieve this goal. The three-year RESCUE research project, funded by the Academy of Finland, delves into how the resilience of cities and the built environment can be created and enhanced. Coordinated by Aalto University, this multidisciplinary project combines futures studies, architecture, land use and regional planning, and real estate economics. The research work of the University of Turku's Finland Futures Research Centre focuses on utilizing foresight expertise to support decision-making, probing into policies, regulations, recommendations, and practices needed for the future.[4] In this chapter the characteristics of urban futures resilience are presented in the form of Top Ten theses or statements[5]. Each statement is briefly described and illustrated with vignettes – examples of radical innovation. Vignettes can be

understood as creative fictional prototypes for scenarios (Rishiart 2013) – brief flashes for narrative episodes.

As cities are the venues of everyday life and socio-technical change around the world and provoke imaginations of how our future lives could be (Collie 2011; Schmitt 2013; Simon & Leck 2015; Frantzeskaki et al. 2018; Dobraszcyk 2019; Scarascia-Mugnozza et al. 2023), the futures of cities have been and will continue to be one of the enduring themes of futures research in terms of content.[6] Urbanization is one of the increasing and most impactful megatrends. An essential aspect when exploring the futures of cities is firstly that cities not only grow but become increasingly complex socio-economic and socio-ecological systems. This perspective echoes the thinking of Michael Batty (2022). Cities are constantly defined by the fact that they are susceptible to crises; cities are the arena of crises. On the other hand, cities also overcome crises by generating innovative solutions. Cities can also be seen as microcosms of life, meaning they are not just buildings and infrastructure, but also people, spaces, activities, meanings, and the environment with all their interactions. At their best, cities have the ability to adapt to the psychological dynamics and routines of people. This is because urban dwellers have a need to experience their environment as meaningful. Otherwise, a city is merely living in a box. It is important for people to have a commitment to their own neighborhood, city, region, etc., as emphasized especially by Jane Jacobs (2016).

Governance Theses for a Futures-Resilient City and Decision-Making

Table 4.1 presents ten theses as statements of our perception of urban resilience in the future and one bonus thesis, which are considered important to recognize in governance efforts. After the table, each thesis is elaborated on in terms of its content. The theses are not intended to show any order of priority but rather to be addressed as a whole.

Table 4.1 Governance theses for a futures-resilient city

1. **Anticipatory Governance – Embracing Foresight Seriously and Systematically into Urban Planning and Administration**
2. **Embracing Systemic Analysis Instead of Siloed Approaches**
3. **Adopting a Collaborative Ecoregion Model – City as Part of Surrounding Countryside, Land, World...**
4. **Introducing Crisis Awareness as a Key Element of Futures Literacy**
5. **Cultivating Temporal Competence and Deepening Lifecycles**
6. **Integrating a Peer Society Mode**
7. **Understanding and Enabling the Multilocal Society Mode**
8. **Understanding Hybridization and Designing and Utilizing Hybrid Spaces**
9. **Increasing Experimentation – Leveraging Pilots**
10. **Setting the Bar Higher – Pursuing Leadership**

Bonus Thesis: Shaping Urban Planning/Development Futures

Thesis 1: Anticipatory Governance – Embracing Foresight Seriously and Systematically into Urban Planning and Administration

Anticipatory governance applies not only to cities but also to countries and companies, etc. In other words, anticipatory governance involves integrating foresight systematically and continuously into one's own activities, using a variety of foresight tools (Boston 2017).

In Finland, examples of governance utilizing foresight include the establishment of the Committee for the Future in 1993 and around the same time, the initiation of the government's process to produce futures reports by the Prime Minister's Office. As such practices are becoming more integrated into governance systems, this is also posing increasing questions about the epistemologies, conceptual approaches, and frameworks adopted by the stakeholders involved in such assessments and exercises, with an aim to make any type of future-oriented engagements more comprehensive and holistic (Jurgilevich 2021; Muiderman et al. 2022). Furthermore, it is noteworthy that globally, as more and more countries are interested in foresight (Heo & Seo 2021), strategic foresight is being taken seriously in a whole new way. For instance, foresight used to be practiced in various organizations scattered across different units, often with no knowledge of each other. However, now entities like the EU, OECD, and UN have elevated foresight to a central role. Even NATO is developing its strategic foresight process.

The EU has launched an annual strategic foresight report (European Commission 2023).[7] In addition to this, foresight training is also being provided to officials. The OECD Secretary-General's office has established a unit for strategic foresight, and an active foresight community has been established within governance. The UN Secretary-General's office and UNESCO have also distinguished themselves in foresight. The UN's foresight report *Our Common Agenda* (UN 2021) and its five foresight proposals have gained publicity, including evaluation by the Millennium Project (MP 2022). Several Finnish futurists also participated in the Delphi study described in the Millennium Project's evaluation report. Practices from the international arena are thus finding their way into Finland, even though Finland can be considered a pioneer. *Our Common* Agenda calls for global cooperation in inclusive networking and effective multilateralism, proposing a World Summit on the Future for 2024. Meanwhile, Finland's Committee for the Future launched the concept of a Futures Committees' World Conference and held its first international meeting in October 2022 in Helsinki (see the report on the event by the Committee of the Future 2022). Anticipatory governance as an umbrella concept is applicable to any administration but according to our view it is particularly appropriate when adapted to the urban governance context – planning and governing cities is inherently about building futures.

Thesis 2: Embracing Systemic Analysis Instead of Siloed Approaches

To prevent siloing, individuals, organizations, cities, and countries should develop peripheral vision (Day & Schoemaker 2006; Schoemaker 2019). This means looking beyond one's own sector and considering developments and areas outside one's own industry.

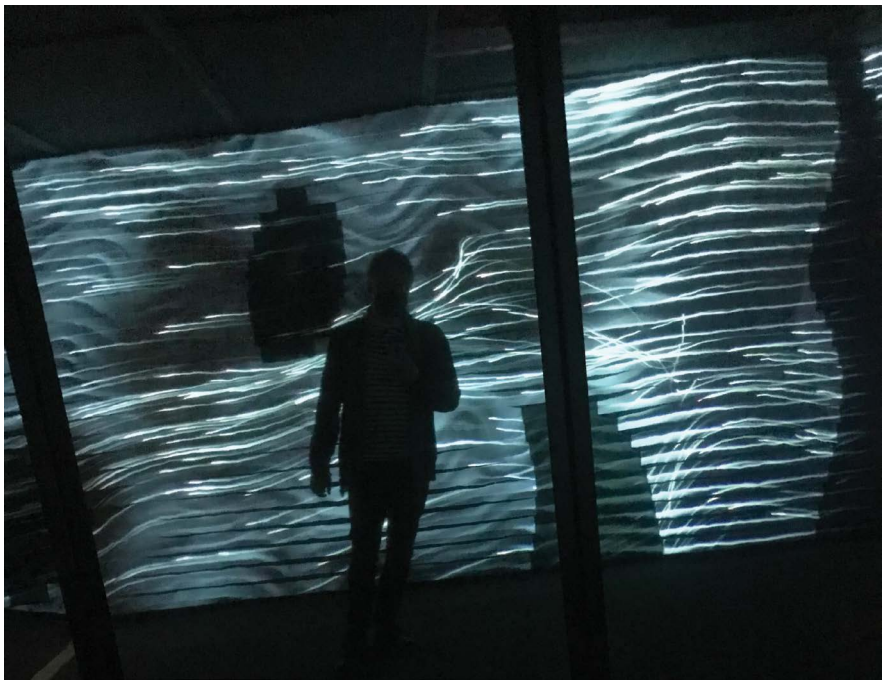


Figure 4.1 Vignette for experiential spaces for anticipatory governance.[8] In Cairo, the third assembly UN Committee for Strategic Threats had begun, a touring body of elected members that takes responsibility for deliberating and preparing for future global risks. This year had learned from past reluctances and incorporated experiential spaces on the themes to better engage and deliberate the long-term threats. (Photograph by Amos Taylor from Heureka facing disaster exhibition)

In urban planning, the land use, housing, and transport agreements (MAL)[9] focus on these three key urban functions as reflected together. In addition to this, other functions should also be considered. However, this is just the first step. The intention is to step out of the 'box' and open up the boundaries of thinking. The concept of *holobiont* from physics, posited as a socio-cultural interpretation by Ugo Bardi, a member of the Club of Rome, suggests that local community-based resource management could stabilize our entire economic system.[10]

Such phenomenon-based thinking that adopts a systems view and holistic approach encompasses different forms of knowledge, such as tacit knowledge, embodied knowledge, geographic information, and spatial information. The multidimensionality of knowledge could break sector boundaries. Entire concepts could also be rethought. Futures research often questions existing structures and institutions if they are found to be inadequate or dysfunctional. Thus, relevant considerations can be directed towards questions like: What is transportation? What is housing? What is a city?

An example of entrenched thinking and 'near-sightedness' toward the future, which emphasizes near- or medium-term outlooks, can be seen in transport

planners who predominantly have perceived cars as internal combustion engine vehicles, set firmly in the prevailing road infrastructure, without alternatives. Futures research encourages a longer-term and wider perspective. When aiming to reduce emissions from transportation, there are several opportunities for systemic and socio-technical change. What if the entire fleet of vehicles becomes electrified? How does current transportation planning and decision-making support electric vehicle use? How much can innovations in shared mobility assist in further sustainability shifts, for instance in modality shares? Not much, as the short-sightedness of current thinking only sees emissions-producing automobiles, with predefined usage rates and infrastructural options, and subsequent investment needs as a planning frame.

Moreover, debates on what constitutes equal treatment of different population groups is a case in point where the contentions of present needs and future considerations intertwine as alternative claims to environmental and social sustainability. A case in point is the construction of Kruunusillat in Helsinki, where a bridge is to be built only for light traffic and trams.[11] The existence of future generations' mobility needs, and the spectrum of potentially available new modes of transportation and emissions-free technologies, was not fully anticipated. Near-sightedness or a narrow set of considerations in current planning closes off futures (closed futures) – it prevents the versatile use of the bridge to serve all population groups. With an aging population, space could be reserved for emerging modes of transport – and their potential should not be limited a priori by restricted infrastructural solutions. Futures thinking encompasses systems thinking, as a range of possibilities, and makes black-and-white, either/or thinking an increasingly outdated approach. An example of an alternative action, as a 'silver bullet', is the claim of a city center tunnel. If future cars are hidden from plain sight as emissions-free electric vehicles, they would free up space on the street level for pedestrians, cycling, and light mobility. Despite obvious social, health, and environmental benefits, this solution has not been implemented due to high economic costs. Ultimately, the aim is to lower absolute transport volumes through far more effective and innovative transport systems. Otherwise, Finland and European societies will fail to decrease their energy use, and will continue to place increasing pressures on biodiversity, materials, nature, and energy demand (EEA 2023).

Thesis 3: Adopting a Collaborative Eco-Region Model – City as Part of Surrounding Countryside, Land, World...

In urban planning, the concept of bioregionalism can be utilized (Patrick Geddes 1854–1932). Bioregionalism is, in fact, a response to several problems that afflict cities. The relationship between the city and the countryside should be based on partnership, not either/or. Based on bioregionalism, cities should be seen as part of ecoregion wholes. This thesis is closely related to the previous thesis, which emphasizes a systemic perspective. According to Geddes, regional cultures adapt to the needs of local environments. However, the social and ecological conditions of the environment limit this adaptation process. Therefore, he emphasizes the

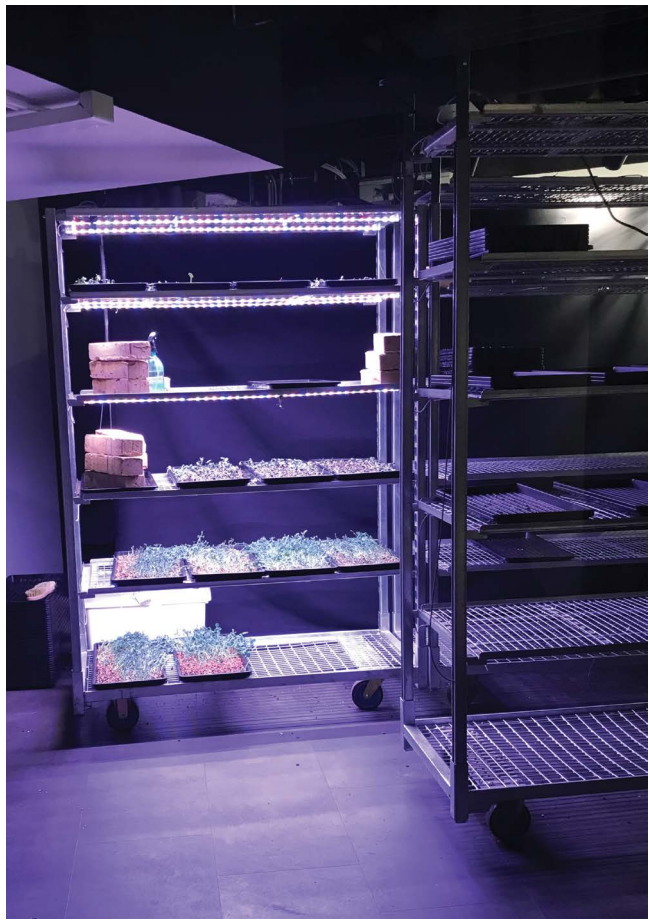


Figure 4.2 Vignette for a systemic and holistic view of urban space use. The city of Helsinki has for a number of years had a mayor of nightlife, the services and governance of urban nocturnal life. At first this was related to the growing nocturnal entertainment culture, but quickly transformed to encompass massive unutilized spaces and services, for example for indoor vertical farming. (Photograph by Amos Taylor)

importance of adapting local cultures to the specific features of the ecosystem. In a healthy ecoregion system, nature and culture are inseparable and mutually supportive. Geddes can be considered a pioneer in modern urban planning and regional planning. He introduced the term 'conurbation' to describe the larger city and the surrounding smaller cities and rural areas. Geddes also developed a theory of comprehensive 'biopolis', anticipating later explorations of eco-efficient urban regions (Welter 2002; Heinonen 2006).

An ecoregion as a whole is resilient during a larger external crisis, but if there is an interruption, the city's resilience suffers. The city is dependent, among other

Figure 4.3 Vignette for ecoregional thinking. Bioregionalism focuses on the relationship between the city and the countryside that is based on a balanced stance. The concept of holistic ecological urban planning by Patrick Geddes (Welter 2002) fuses 'bio-psychosis' and 'psycho-biosis' into a synergy of facts and thoughts (dreams) as well as acts and deeds. Acts happen in places where people (=folk) work, i.e., have activities. (Photograph by Sirkka Heinonen)

things, on food coming from rural areas. If a natural disaster, civil war, power outage, etc., occurs, the link between the city and the countryside is at risk. Rural areas can sustain themselves for much longer. The relationship between rural areas and resilience is also apparent in the fact that those living in rural areas consider their resilience to be good (Heinonen & Toivonen 2021a).

For this reason, it is of primary importance for cities to develop their own self-sufficiency and security of supply. This can be represented by practices such as vertical farming, urban gardens, and urban forests/forested cities (*rus in urbe*), in addition to collaborative learning and innovation. This will not happen if there are information gaps and information asymmetry between stakeholders (Colebatch 2014). Stakeholders must be kept well informed. However, it is even more important to create a relationship among stakeholders from which real learning can occur. Innovative partnerships can even emerge from 'unusual' combinations or learning from alternative localities, as a move beyond or transforming sister city arrangements for cultural and commercial purposes: Helsinki-Hong Kong, Hanoi (Vietnam), Espoo-Entebbe (Uganda), Isfahan (Iran), Vantaa-Veracruz (Mexico)/ Valparaiso (Chile), Windhoek (Namibia), Kuusamo-Kerala (India), Kumasi

(Ghana), Canton (China). Already, cities are collaborating in networks, such as the C40 – a global network of mayors of the world's leading cities to confront the climate crisis. From seemingly distant partnerships and unorthodox designs, new innovations can be found.

Thesis 4: Introducing Crisis Awareness as a Key Element of Futures Literacy

Imagining, anticipating, dealing with, and learning from crises can be considered a central element of futures literacy. For example, in the aftermath of a pandemic, there is a risk of falling into the illusion of survival instead of delving deeply into the diverse learnings available from the crisis (Karjalainen et al. 2022a). However, this requires analysis and tracing of cause-and-effect relationships, the effects of implemented measures, and side effects. Especially for children and young people, isolation can, in the long term, manifest as trauma or other difficulties. The goal of learning from crises also involves the ability to 'peel' and process crises. This creates a continuous capacity to endure and scan crises. Crises have a dual nature: they are both threats and opportunities. Crisis awareness is also an absolute requirement for futures resilience.

In futures studies, the VUCA world, in which we already live (volatility + uncertainty + complexity + ambiguity), is often highlighted (Kaivo-oja & Lauraéus 2018; Kurki & Malmelin 2021). A similar concept, the TUNA framework, presents the world as at a stage of turbulence, uncertainty, novelties, and ambiguity (Ramirez & Wilkinson 2016). We cannot escape change and its resulting uncertainties, but we can try to understand them, develop resilience to overcome them, learn from them, and reorganize our actions.

In the post-pandemic, continuously surprising 'new normal', there is an emphasis on the need for individuals, organizations, cities, communities, and the entire public sector to anticipate and confront various risks. A variety of digital solutions can enhance our operational reliability and agility in responding to changes, but we have also come to realize the importance of physical structures such as the built environment and infrastructure and be realistic about underlying material flows. Future crisis management is not just about ensuring the agility of human and organizational functions and increasing resilience, but also about the ability of traditionally rigid, location-bound elements like private, semi-public, and public spaces to have flexibility and adapt to changing conditions. Special attention should be given to the interconnections of crises and their indirect effects (Heinonen & Toivonen 2021a).

Thesis 5: Cultivating Temporal Competence and Deepening Lifecycles

Time is a fundamental concept in futures studies. Whenever we talk about futures and their anticipation, time is a key factor. The future is one strand of the dynamic continuum of time dimensions. In future considerations, it is also crucial to think about the time span chosen for analysis—short, medium, or long term. Short time frames are mainly used outside of futures studies, for example, in market analyses.

Figure 4.4 Vignette for crisis literacy on an educational pathway towards urban resilience. As families are offered financial incentives to leave the overcrowded crisis-ridden urban areas, not only were decision-makers becoming savvy with acknowledging 'crisis literacy', but parents could seek advantages too. (Photograph by Amos Taylor from public street game Cuauhtémoc Centro, Mexico City) (Inspired by: www.theguardian.com/world/2023/jan/03/million-yen-per-child-to-leave-tokyo-japans-offer-to-families)

Long time frames can span 50, 100 years,[12] or even longer. What is time? It is not just a physical quantity but also a psychological and socio-cultural concept [13] According to the Chinese Taoist philosopher Lao Tzu, time is just a construct – 'if you say you don't have time for something, you just don't want to do it'. Time research as a separate discipline is exploring deeper depths—quantum mechanics is opening up new perspectives for the concept of time. What if there is no time? Or if time is always present in all its forms: are past, present, and future existence one and the same? There is even a logically impossible thought: What if the future is before the past or present in the time universe? This time conundrum can be further complicated by the endless possibilities of counterfactual futures.

In terms of urban planning, it is essential to stretch the planning horizon. It is also worth considering the overall coherence and suitability of short-, medium-, and long-term perspectives. Timeframes and dimensions can be seen as part of a whole. On the other hand, when a crisis strikes, quick action is necessary. When the longer-term situation has already been considered in advance via alternative events and scenarios, action can be quicker in a crisis.

Temporal competence could include the idea that buildings should be designed to be either short-lived in their location or very long-lasting in their place. It is important to note that the medium term is the worst possible option since it is just a compromise. However, this medium term is currently the prevailing construction style. In the short term, disposability and portability are essential, and they should be considered. In the long term, the focus should be on various spatial flexibility strategies. It is essential that the choice related to the timeframe is made at the beginning of a project, as it significantly influences the direction of the whole project. As a new proposition, the concept of mobile or modular construction can be considered, where the location of the building is not permanent, but the structure itself is.

On the other hand, one might also question why a building could not be designed to last at least 500 years, like medieval castles. This has been advocated, for example, by construction councilor Olli Lehtovuori.[14] He is also concerned that the current overly efficiency-focused housing construction, a predominant trend in Finland, might ruin past urban planning efforts. He believes that weakly justified, overly tall, and far more intensified housing construction included in zoning, as an outcome of excessive growth goals, could lead to the degradation of previously internationally praised green areas. According to Jussi Vuori of the New City architectural collective, in the future, buildings should be designed to be permanent – buildings cannot be dismantled anymore. New buildings should always be designed in a way that suits various future functions.

Thesis 6: Integrating a Peer Society Mode

The peer society mode or model refers to breaking down hierarchies and engaging in horizontal collaboration. Peers hear and listen to each other – the weight of a peer's voice is continuously growing. The central idea in this peer society thesis is to involve citizens more strongly in the planning process from the very beginning. Indications of such actions already exist. In urban planning, citizens have long been required to participate in the planning process. This has been done, for example, in Helsinki's planning, where several interaction planners operate. However, a crucial question remains as to what else is needed in addition to current actions. The concept of a peer society could bring forth what else is needed or could be done.

Peer network activity is linked to the prosumerist mode of operation, and this idea is closely related to various fields, including energy. This refers to the transformation of the consumer into a producer. A regular resident can produce their own electricity through rooftop solar panels. In the visions of new energy solutions and systems, the city has an increasingly important role as a clean energy producer, and a more efficient consumer of clean energy. However, the socio-cultural impacts of imagined changes are often overlooked. In addition to a technical-economic focus, energy can be approached from a socio-cultural perspective; it is part of lifestyle and people's values. The challenge of making maximal use of renewable energy can be amplified through the rise of the peer society, which builds support for the model of energy prosumerism (Heinonen & Karjalainen 2019a)[15].

Figure 4.5 Vignette for trees as infrastructure. As trees become infrastructure, they can be recognized for their vital environmental and wellbeing role for urban environments. This long view is reflected by the legacy of the Avant Garde artist Joseph Beuys whose dying wish was to create an artwork of streetside planted trees and rock, that would provide benefit future generations in his hometown of Kassel. A work he would never witness in full. The art and science of the long view of trees as infrastructure can be celebrated for its perennial benefits. (Photograph by Amos Taylor)

Members of peer networks are essentially both consumers and producers. Peer networks can provide a new foundation for experiencing meaning. With one's own production – whether it is energy, food, or services – the sense of meaningfulness in life might gain momentum. The concept of prosumerism was initially presented by Alvin Toffler in his book *Third Wave* (1980). It has even been proposed that an entire field of study – consumer behavior research – should be renamed to prosumer behavior research (Kotler 2010).

However, the peer society model also faces challenges. For instance, it can be argued that even though people can participate if they wish, representative participation might not be achieved. A key question is how to involve those who choose not to participate. The narrative of sustainable futures related to the peer society has been published in the Finland Futures Research Centre's Publications series (Heinonen & Karjalainen 2018; 2019a). Furthermore, in the RESCUE project's narrative, which emphasizes urban resilience, elements like peer learning are visible in homegrown food production. Alongside self-produced vegetables and various sources of protein, mushrooms, bacteria, yeasts, and algae are cultivated for

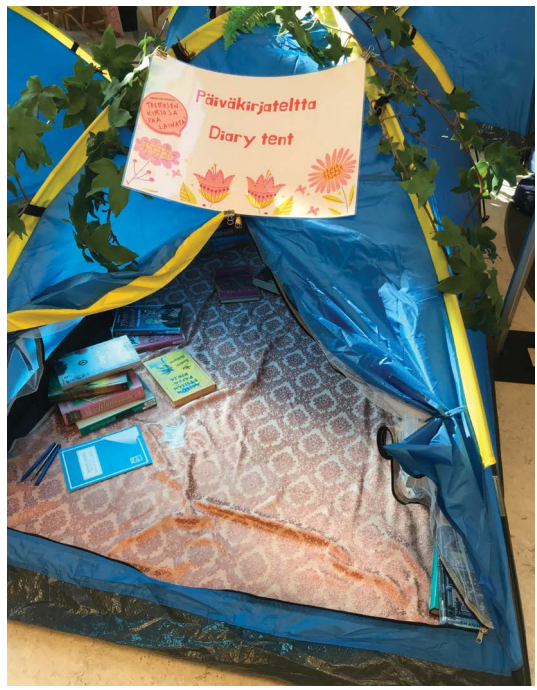


Figure 4.6 Vignette for peer-to-peer model, becoming a vehicle for inclusiveness. The complex crisis that society faces is reflected in the poor mental health affecting especially young people. Urban design aids through urban collectives, offering family-like support, and designing the city and its nature through matching needs and skills. Nature and youth can thrive in this way. https://oecdcogito.blog/2023/03/17/thriving-youth-in-cities-bringing-community-and-nature-to-life/ (Photograph by Amos Taylor from Stoa Culture Centre, Helsinki)

use in food preparation, energy generation, and waste management in households and shared spaces. Such collectively executed cultivation also strengthens community bonds (Heinonen et al. 2023).

Thesis 7: Understanding and Enabling the Multilocal Society Mode

Multilocality refers to the situation where work, housing, and leisure activities are increasingly spread across multiple locations. This model can be compared to the past, where people lived in the city and went to their cottage. However, the situation has changed in such a way that nowadays, periods spent at the cottage are extended, or parts of the year are spent abroad. The key accelerators and drivers of this phenomenon include digitalization, changes in work, increased leisure time, urbanization, and population aging. To account for multilocality in planning, there is a need for more accurately anticipated future population movement and service needs (Heinonen & Ruotsalainen 2011; Maununaho & Lilius 2022).

The multilocality phenomenon is also related to the sharing economy. Multilocality does not necessarily mean owning a residence or workspace in multiple places and towns, where time is then spent – living, vacationing, or working. Thanks to the sharing economy, it is easy to find rental apartments or Airbnb accommodations. A growing trend is the practice where people exchange their homes for a certain period, domestically or internationally. New service providers are also awakening to the new potentials of remote work, which became apparent during the pandemic when remote work was conducted in isolation within the home's confines. Now, some hotels are marketing special remote work packages for day use, where breaks can be utilized for various refreshment and exercise services. At its core, multilocality serves employee wellbeing and creativity and thereby supports efficiency. However, not everyone has the means or opportunities for multilocality on their own, which can lead to exclusivity. Multilocality can appear as purely a phenomenon of the mobile experience society. Therefore, societal discussion could focus on supporting diverse and sustainable multilocality through various measures and acknowledging the role of multilocality practitioners in supporting community resilience. For instance, in the event of a crisis in a certain area, the specialized knowledge of 'multilocal visitors' could be utilized in rescue operations.

Thesis 8: Understanding Hybridization and Designing and Utilizing Hybrid Spaces

Hybridization involves an age-old phenomenon: in biology, it refers to the fusion of two things or organisms. In mythology, a hybrid is a 'monstrosity', such as the snake-headed Hydra that elicited more fear than curious interest in ancient times. The concept of hybrid has also been applied in social sciences, arts, and cultural studies, referring to processes where separate practices and structures merge to create new forms and functions.

In futures studies, hybridization is intriguing because it draws attention to change. Can we better anticipate future changes by analyzing the types of hybridization

Figure 4.7 Vignette for multilocality also covering episodes of temporary use of urban spaces. The season had changed and it was time to leave the city as the first days of late autumn coolness arrived. City living was spread out over the few blocks of improvised spaces, that everyone became quickly accustomed to, dining, reading, and even sleeping in temporary structures that increasingly pop up each year. 'We live here!' was a slogan written throughout the district. (Inspired by: https://www.designboom.com/architecture/inflatable-bus-stops-reading-nooks-ulises-midjourney-04-11-2023/ https://floating-berlin.org/) (Photograph by Amos Taylor, Alusta Pavilion temporary construction Helsinki Design museum Yard 2023, by Maiju Suomi & Elina Koivisto)

emerging in society? Hybrids can be combinations of various attributes: physical + virtual/digital, public + private, natural + artificial, material + immaterial, and so on. Hybrids can also be combinations of different domains: science + art, technology + nature, humans + machines, science + religion, and more. Typically, hybrids combine different activities: work + residence, work + mobility, etc. Hybridization can also explore combinations of different roles: citizen + politician, consumer + producer, teacher + student, layperson + expert, and so forth. We have developed a preliminary typology of hybridization (Karjalainen et al. 2022b). An interesting question is also how hybridization can support community resilience and, on the other hand, to what extent it might increase risks and vulnerabilities.[16]

This thesis focuses on the merging of spaces and activities and their impacts. Architecturally, hybridity represents multifunctionality. There is also talk of building adaptability, where a space initially built for one purpose can be converted into another when needed. In hybridization, this adaptability is permanent, meaning that a space can host multiple elements and functions simultaneously or transform flexibly at intervals. In its ideal form, these combinations of spaces – various hybrids of offices, residential spaces, and public spaces – begin to realize the potential of the green and digital transition. However, it is noteworthy that this alone does not necessarily enhance resilience; it might even work counter to it. Hybridization is an intriguing yet relatively underutilized aspect of urban planning. It is recommended that public buildings are used for different purposes as well – for instance, schools used for unemployed workshops in the evenings, nursing homes providing practice spaces for young bands, etc. In terms of resilience, the versatility of spaces and the

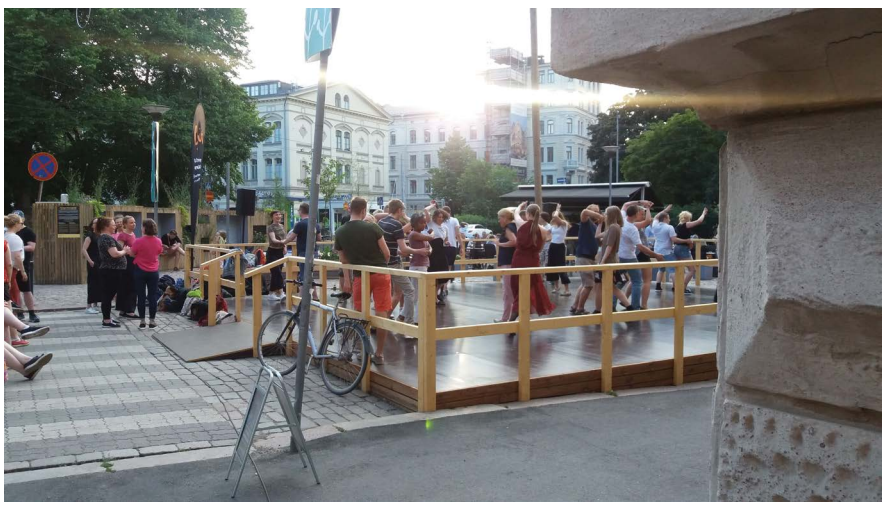


Figure 4.8 Vignette for versatile hybrid spaces. A hybrid multifunctional space combined with an urban space. There can be a cafe and performancein the form of dance moments during the summertime. The use of this hybrid space is free but has to booked in advance. (Photography by Risto Sivonen, temporary dance pavilion at Desing Musem, Helsinki)

merging of functions can act as a buffer mechanism and a path to swift responses (Karjalainen et al. 2022b; Heinonen et al. 2022a; Heinonen 2022b).

Thesis 9: Increasing Experimentation – Leveraging Pilots

The recommendation of a culture of experimentation applies to urban planning, which has previously been declared an approved approach even within government administration. The purpose is to enhance experientiality, meaningfulness, wellbeing, multisensory experiences, as well as to attract related innovations. To diversify the monotonous urban landscape, bolder experiments and pilots are needed. Experiments can be designed and carried out to solve pressing problems or purely to test an idea, or to seek novelty. The risks are not significant since the experiment is limited in time and place. The experiences gained from experimentation, in turn, provide insights into future plans and choices about what to continue, modify, or discard. A fully fledged experimental attitude assists in identifying 'real' novelties (Poli 2017, 2). Experiments often involve testing something 'new' – new could mean an entirely novel solution, operational model, service, or way of thinking. New could also involve the reimagining of an old idea or a combination of the old and the new. Sensing the new requires curiosity towards the potential for change and the future in general. Since ancient times, Socrates asserted that an open, curious attitude and trying out new things are the path to achieving goodness. Novelty can also be found precisely in tolerating or observing differences. According to Turunen (2015), cities that have flourished are those that have understood foreign languages and cultures and embraced diversity. When the environment allows for freedom and foreign influences, the result can be a success story in economics, science, and art. Experimentation fundamentally involves learning, not just testing. Learning from mistakes is also important and should be embraced.

In the urban landscape, experiments enrich by making the cityscape more diverse. Floating buildings have been one experimental focus, and in some countries like the Netherlands, they have long been a part of everyday life, often in the form of floating houseboats. Finland has also begun experimenting with floating structures. An example designed for year-round living, assembled entirely on land and placed on concrete floats, is on display at the Loviisa housing fair. The harsh Finnish winter conditions impose special requirements on solutions for floating construction. Floating buildings are an example of the combination of the previous thesis of hybridization and experimentation: a floating residence combines the concepts of a ship and a house. The 'Lauttasauna' combines the concepts of a ferry and a sauna, serving as a popular recreational service. Hybrids often exhibit an exploratory nature and, with usage, offer experiences to further develop the respective concept. Floating construction has been a solution driven not so much by curiosity but by the necessity dictated by conditions. In Nigeria, there are entire floating building complexes on the outskirts of Lagos, where all activities take place on the water. Consequently, one should bear in mind that experimentations are culturally and geopolitically versatile and in need of contextualizing.

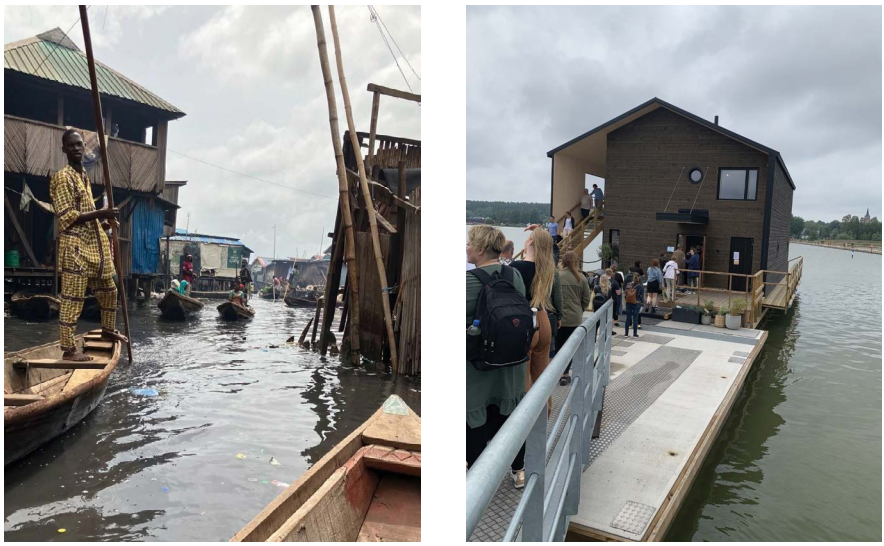


Figure 4.9 Vignette for floating buildings with different contexts. Floating buildings or communities have various origins and manifestations depending on the context. Floating urban scenery near Lagos in Nigeria where everything happens on floating structures for pressing reasons (flooding and lack of land). In Loviisa, small town in Finland, the floating building is on display and an experimental pilot – there's space reserved for ten such buildings altogether. (Photographs by Pasi Kokkonen and Sirkka Heinonen)

Thesis 10: Setting the Bar Higher – Pursuing Leadership

Internationally, Finnish urban planning is at an above-average level. However, this does not mean that the bar cannot be raised. In Finland, we have succeeded, at least for now, in preventing the emergence of closed, exclusive residential areas (gated communities).

A stronger pursuit of transformative leadership (Montuori & Donnelly 2017) could be aimed at envisioning a prosperous, pleasant, eco-smart city. In such a city, there are equal mobility opportunities for everyone, and there are enjoyable, green public spaces available for all age groups. Cities should also have a zero-tolerance approach to violence and crime. Additionally, there could be a competition for zero tolerance towards loneliness and exclusion.

Leadership is also a framework in futures studies where pioneers are identified and analyzed (Heinonen et al. 2017; Heinonen & Karjalainen 2019b; Heinonen et al. 2022b). Pioneers – whether they are cities, organizations, states, or individuals – are steps ahead of others in future scenarios. Just as weak signals are indications of emerging phenomena that may intensify and transform into trends, pioneers open up perspectives on possible futures. Leadership can be seen as shaking up entrenched mindsets and paving the way for alternative tomorrows. In this sense, pioneers are pathfinders and 'trailblazers of the unknown'. The world is not

Figure 4.10 Vignette for flexible and adaptive leadership. The professor felt very misunderstood for a long time, but was adamant that change needed to happen due to climate change. Day must become Night and Night must become Day for many workers, students, and citizens of the heat-trapped cities. Working during the cooler nights was the way forward. (Inspiration www.theguardian.com/environment/2021/jul/23/athens-appoints-chief-heat-officer-combat-climate-crisis) (Photograph by Amos Taylor Cuahtemoc Centro, Mexico City)

unchanging but in motion, and pioneers, as key players and catalysts of change, embody this movement.

In urban planning and strategies, it is worth consciously considering the type of leadership to pursue and concretely incorporating it into visions.

Bonus Thesis: Shaping Urban Planning/Development Futures

As a bonus thesis, we propose contemplating the futures of urban planning itself in addition to exploring the futures of cities. What kinds of futures can cities have during times of deep uncertainty and because ofclimate emergency? Specifically, how could urban planning evolve, bitten by the 'Socratic gadfly', gain energy to question current, not-so-effective practices and perspectives? At the same time, this

would strengthen long-term thinking and holistic examination that takes all population groups and biodiversity into account. Tools such as scenarios, identifying images of the future, and especially the Causal Layered Analysis (CLA) method (Inayatullah et al. 2023), could be used. In the CLA, as a specific foresight technique or rather conceived as a process, the essence of the city would be delved into and dissected on four levels: litany, causal relationships, worldviews, and metaphors.[17] Such foresight techniques can ideally be applied in futures workshops or futures cliniques (Heinonen & Ruotsalainen 2013). In the RESCUE project there have been six futures cliniques which are reported in separate documents. Three of them used the CLA method to test urban resilience of a crisis situation. By utilizing CLA, it is possible to drill deeper into the way uncertainties and their extreme forms reveal themselves, and affect our minds during crisis events. By setting people in simulated, novel situations, resilience can be assessed via experienced successes and failures. 'Foresight modes' are revealed by probing four layers: 1) indicating litanies, 2) paying attention to systemic structures, 3) weighing the influence of worldviews, and ideally 4) bringing to the fore myths and metaphors – deeper beliefs that influence sensing and behavior. The RESCUE project ran three

Figure 4.11 Buildings as biomimic structures or meaningful messages (Heinonen & Minkkinen 2016). The power of metaphors can transform perception of futures. Buildings, structures, and practices that mimic nature (biomimicry) encourage our thinking to become more forward-looking and more attentive to humans-nature-technology interaction. (Photograph by Sirkka Heinonen, Florida)

CLA workshops that engaged participants in an overwhelming situation after a geomagnetic storm had caused a power cut, the outcome of which was not known. The cities of Rovaniemi and Kotka, and the Tripla complex in Helsinki, all in Finland, are different in their location, demographics, and institutions.

Conclusions

This section concludes this chapter by claiming that the theses or statements for urban resilience, as presented in the previous sections, provide the key pillars both for anticipatory urban governance and for urban futures resilience. The statements can also be used as a checklist for urban planners and policymakers. They can also be utilized as material for stakeholder sessions and discussions, as well as be further elaborated at city, corporate, and citizen levels. To conclude, we also provide here insights from a futures clinique where both enabling and inhibiting factors of urban resilience were addressed[18]. Table 4.2 presents factors that could be considered

Table 4.2 Enablers and inhibiters of urban futures resilience

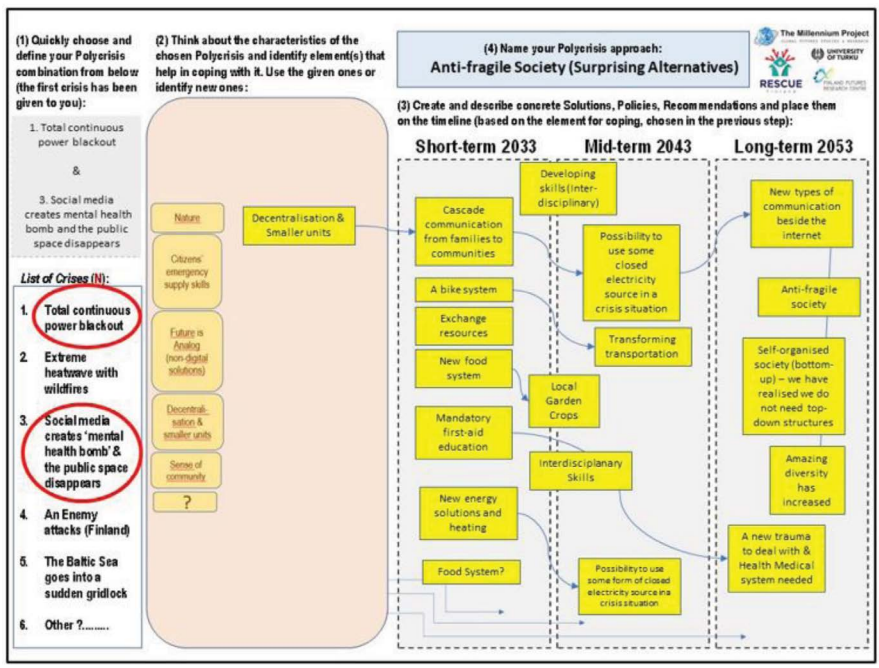
Enablers	*Inhibiters*
• Judgment capability, but on the other hand, courage and responsiveness. • Ability to use information correctly. • Built environment supporting alternative ways of thinking and acting. • Strengthening the relationship between the environment and humans as part of resilience. • The idea of mosaicism, to bridge the gap between cities and rural areas: a way to highlight the uniqueness and meanings of places and increase attractiveness. • Constructing the environment in such a way that people have a genuine choice between the rural and the urban; on the other hand, construction practices could enable merging of the two lifestyles (while reflecting digital worlds critically). • Residents' and individuals' opportunities to contemplate and voice what they want for the future (e.g., Meilahti, Helsinki), with resourcing • Renewal of thought patterns, for example, replacing extensive functionality and individualism with sense of community; values and ethics, which will hopefully deconstruct patterns of separation. • Flexibility in the application and emphasis on shared use of spaces.	• Underutilization of information when planning residential areas. • Forgetting ethical considerations in construction. • Inability to leverage grassroots actors' ideas. • Influence of external actors' interests on urban planning and making decisions that go against ideals. • Narrow economic assumptions • Doing things the same way as before. • Creative actors feel that bureaucracy is slow and new solutions are not accepted. • When the environment does not support interpersonal encounters, the result is loneliness and isolation. • Overlooking root causes of inequalities or even potential segregation • Lack of residents' ownership in their own cities. • Lack of strong channels of influence, even though technology enables various solutions. • Being too strongly locked into the idea that each property has only one purpose.

when strengthening the futures resilience of cities. These factors were identified in a futures clinique conducted within the RESCUE project.

Naturally, urban planners and policymakers are advised to strengthen the enablers and diminish the inhibiters for urban futures resilience. When tackling the question of policies that are needed for making cities more resilient, a guiding and illustrative timeline could also be set as a basis for a roadmap showing what policies are recommended and when. As a tentative roadmap for resilience policies Table 4.3 gives an example. This roadmap describes the situation where a crisis has taken place and a group of experts discusses in that context what would be needed for urban policy in three distinct time horizons. These insights were distilled from a futures clinique conducted in a Special Millennium project session during the FFRC Conference on 'Empowering Futures' in Turku 15 June 2023 (Heinonen et al. 2023b). The aim of this foresight exercise was to immerse in a crisis situation, i.e., in a polycrisis of a given crisis plus another crisis that the group chose to tackle and identify solutions and policies for not only surviving the crisis but also learning from it, and rethinking current practice.

The right-hand column of Table 4.3 shows a roadmap of three timelines: 2033, 2043, and 2053. Policies for giving an important role to education, new skills development, and communication are evident in the results. In addition, technical

Table 4.3 Policy roadmap as a result from immersing in a crisis situation of total electronic blackout combined with another crisis – 'mental health bomb created by social media' – in a futures Clinique



policies were also called for, for example, new energy solutions. The need for transformative policies – i.e., policies that push for systematic and thorough-going changes – were also identified.

Systemic structures, whether they are laws, policies, instructions, actor networks, collaborative/all-inclusive education, or training, were quickly seen necessary in the abovementioned CLA futures workshops, since in crises no one can survive alone. Preparedness requires foresight. There are events that can be knowingly prepared for, but resilience was found to also require adaptability, since crises do not occur in a planned manner. Agile and adapting behaviors of stakeholders in an event require activities beyond organizational boundaries. The ability to react involves tacit and embodied elements that cannot be trained for fully at the very moment when the emergency rapidly occurs. Resilience may also emerge from regional characteristics. For example, northern areas of Finland, i.e., Lapland, are known for their regional network that is built for reacting flexibly in even unforeseen incidents.

Practical Recommendations

- Ask urban planners to engage in continuous dialogue with citizens (open doors one day per month at city planning office and mayor's desk) and ask urban planners to live a certain period of time in the area they are planning or redesigning.
- Connect schools in cities with those in the surrounding rural areas via pupil/teacher exchange and study visits; equip urban space with public crisis escape rooms to rehearse real-life situations; and make histories of buildings visible in cityscape via touch screens on façade where the passers-by can have access to various stories concerning former uses and residents.
- Ask kindergarten children to design housing for senior citizens and ask for feedback from them. Open city hall for such exhibitions and allow temporary night galleries in them.
- Provide co-working spaces within libraries and cafeterias; ask companies to provide childcare or senior citizen care space inside their premises.
- Launch an annual competition for an urban design pilot and, based on the most votes, enable such a pilot, encouraging combining social innovation with technical innovation.

Notes

1 The Finnish original of the poem is as follows: *'Tietä käyden tien on vanki. Vapaa on vain umpihanki.'*, in the book *Huojuvat keulat* (1946). The poem is translated by Sirkka Heinonen. The poem is about the feeling of freedom that comes from exploring the unknown. The speaker compares the road to a prison because it limits your freedom of movement. The untrodden snowdrift, on the other hand, represents the unknown. It is a place where you can be free to explore and discover new things. The poem is a reminder that we should not be afraid to step off the beaten path and explore the unknown. There is beauty and freedom to be found in the unexpected. In the field of futures studies this relates to the idea of avoiding path-dependencies.

2 See the special issue of journal *Futura* 4/2021, edited by Sirkka Heinonen and Saija Toivonen, on crisis thinking and futures resilience.
3 This has repeatedly emerged in the future cliniques of the RESCUE project as well.
4 The research project RESCUE (Real Estate in Sustainable Crisis Management in Urban Environment), ongoing from 2021 to 2023, is led by Assistant Professor of Real Estate Economics Saija Toivonen from Aalto University.
5 Top Ten framework is a concept launched by Osmo Kuusi within the Finnish Society for Futures Studies. It consists of a seminar where some key experts are invited to give their own ten theses on the main theme chosen for the seminar, to be debated with the audience. The theses presented in this chapter are based on the presentation by Sirkka Heinonen in a Top Ten Seminar 'The Age of Deep Uncertainty' in February 2023 in Helsinki.
6 See, for example, *Futura*'s special issue 'Future, City, and Us' 1/2015.
7 The latest foresight report by the European Commission is titled *Towards a fair and Sustainable Europe 2050: Social and Economic Choices in Sustainability Transitions*.
8 Vignettes are like episodes or 'mininarratives' as illustration of an evocative phenomenon or practice.
9 The abbreviation MAL derives from the initials of the Finnish words for land use, housing, and transport.
10 See Bardi's interview in FFRC eBook 1/2023 *Constructive Conversations on Urban Resilience*.
11 A city should be designed as accessible to all – not just to young and healthy adults. Senior citizens, disabled people, families with children will be facing closed futures if the set of transport modes best serving them is narrowed down.
12 The 100-year timeframe was explored in the theme issue 1/2018 of *Futura* magazine titled 'Seuraavat 100 vuotta' (in English, the next 100 years) with guest editors Sirkka Heinonen, Matti Minkkinen, and Osmo Kuusi.
13 I conducted my licentiate thesis at the University of Helsinki on the topic *Time and the Future in Seneca's Works* (Heinonen 1990). In the preface of the publication, Pentti Malaska wrote as follows (translated from Finnish): 'Sirkka Heinonen's monograph highlights the integration of futures studies into other disciplines, emphasizing the comprehensive understanding of information for the sake of envisioning the future. The concepts of time and the future themselves and their significance naturally become subjects of contemplation in futures studies. Sirkka Heinonen's research opens up an intriguing connection between futures studies and ancient thought. The topic is important and timely, and significant for further research, especially nowadays, when, based on Prigoginean thinking, the concept of time is evolving or becoming liberated from the mechanical pendulum's "position time" to the "correlation time" of events.'
14 He is a retired Senior Adviser of Building at the Ministry of the Environment.
15 This work by Heinonen & Karjalainen (2019a), *Electrification in a Peer-to-Peer Society: A New Narrative for Sustainable Futures*, has also been published in Finnish (2018) and Spanish (2020).
16 Regarding living in differently shaped buildings, see also Mäkelä (2022).
17 In the RESCUE project, the CLA method has also been used to test crisis resilience in three futures cliniques: for Rovaniemi, Kotka, and the TRIPLA shopping center. The report on the results will be published in the FFRC eBook series.
18 Futures clinique held at Europe Hall (Eurooppasali) in Helsinki on 28 March 2023.

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