

THE NATURE SMART CITY – Finding the Next Urban Vision

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“Every story of yourself in the future is a form of fiction. But if it aligns with where you want to go, it’s called a vision.” -John Maeda

ABSTRACT

In the era of digitalization, we have increasingly moved from real-life experiences towards virtual experiences. Consequently, we have lost our inherent connection to nature and our natural ability to understand the natural world around us. The human-nature connection has lost its meaning in urban life. There is a real need to find a new vision for the post-pandemic city that is different than the pre-pandemic city: we are moving from the tech-driven smart city to Nature Smart Cities with an emphasis on human connection and nature connection.

Howard Gardner, who created the theory of multiple intelligences, later on added to his list naturalistic intelligence or nature smart. This particular form of intelligence manifests itself in an individual’s sensitivity to nature and the world. People endowed with this form of intelligence are the people who see both the forest and the trees. Restoring and rebuilding our interdependence with environmental systems is the very essence of human and planetary wellbeing. How to design cities for happiness, doing and living well, in harmony with humans and nature?

Keywords: Architecture, Urban Planning, Nature Smart City, Eco Smart City, Biophilic City, Scenario Planning, Futures Thinking, Design Thinking

1. INTRODUCTION: Towards the New Urban Narrative

FutureSprint 2030 is a project and a co-creation process for rewriting the future narrative of architecture and the roles of the future architect. The study, executed by the authors between February 2020 and May 2021, was supported by a grant from the Finnish Cultural Foundation. The project was executed in collaboration with the Finnish Association of Architects (SAFA) and the outcome of the study was shared with the working group

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responsible for the Finnish Architecture Policy Programme (Apoli2020)⁹⁵ by the Ministry of Education and Culture.

During the pandemic year 2020-21, a set of interactive virtual workshops were conducted both with a Finnish and an international audience and participants. As a result, a new urban narrative for the post-pandemic city was co-created based on discussions and trend research.

The findings from the research and the discussions demonstrated how *rethinking the future role of the architect and architecture* is globally significant at this unique post-pandemic “reset moment”. Architects could have a more meaningful and important role in creating future societies to better reflect the needs of the people, society, and the planet. The subject needs more research, since there is a significant lack of timely future scenarios related to architecture and the architect’s role in the future. From the systemic point of view, architects cannot do their job alone and architecture cannot be created by architects only. We need more systems thinking when approaching designing, building, and planning the built environment. This kind of holistic view is still very weak in any research on the future of architecture. Through imaging and visioning the future, we can challenge current trends and create alternatives for the betterment of future society.

Architects’ strength has always been their ability to solve complex problems – an ability stemming from their education. However, architects are absent from the public eye, and struggle to communicate their unique expertise to wider audiences, which is of some concern. Another concern is the future development of digitalization, AI-powered design and data literacy, which are all beyond the traditional curriculum/skill set of architects. The more complex the systems of building, planning and planet become, the more leadership skills and co-creation skills are needed by architects. In the future, it is not only the game that will change, but the rules, and, therefore, the outcome, too. In this study, we wanted to look beyond the current architecture practice and see the bigger picture of the future post-Covid urban development: what will the post-pandemic city look like and *what is the essence of the new urban vision?*

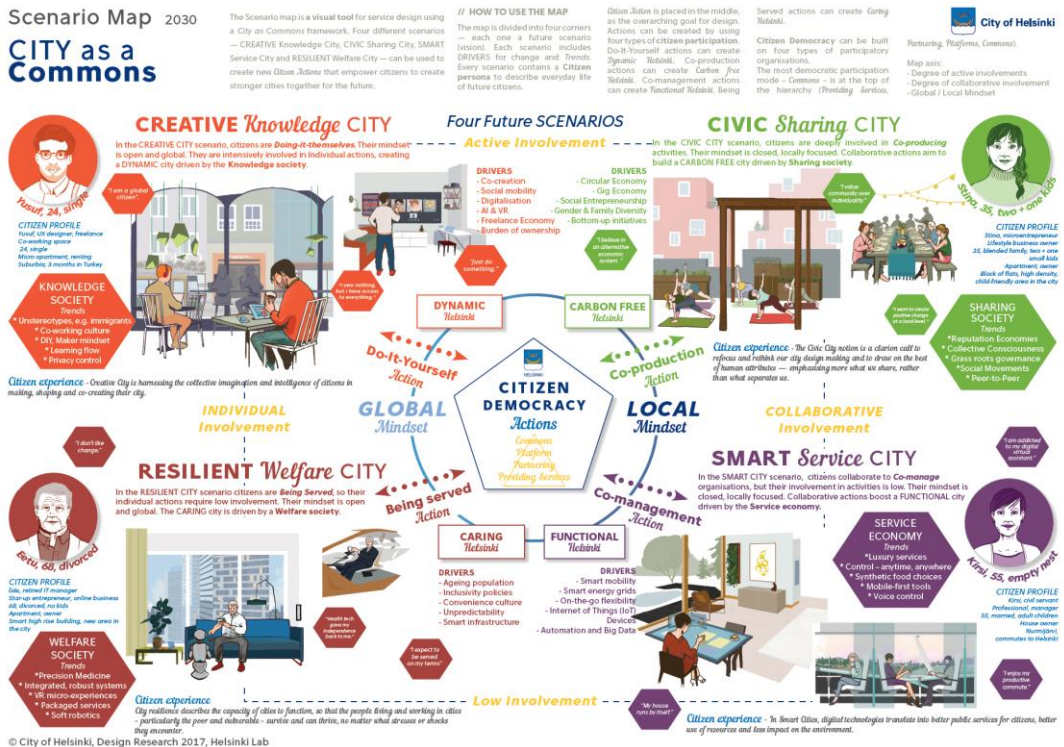
2. METHOD: Combining Design Thinking with Futures Thinking

The overall method – named *FutureSprint* by the authors – is an approach combining the DesignSprint method based on design thinking with scenario planning based on futures thinking. The process allows participants to co-create a future narrative and a shared vision for the future. The pre-created drafts of the scenarios are used as a tool to represent the overall framework of plausible futures based on trend research.

This approach was initially piloted and tested with the City of Helsinki in 2016-2017. Anne Stenros and Minna Takala planned and conducted the scenario planning process for the City of Helsinki by organizing and facilitating a dozen workshops for 250 leaders of the city.

⁹⁵ <https://minedu.fi/en/apoli2020>

The project was based on four future scenarios and four citizen personas. The outcome of the process was a shared future vision and strategy for the city. The scenario process introduced a new element in the traditional strategy planning process of the city. The future narrative approach was an important tool for value discussions with diverse groups of civil servants. The narratives were also accessible to citizens for comment.⁹⁶



Picture 1. Helsinki City Scenario Map 2030. Stenros & Takala 2017. City of Helsinki, Helsinki Lab

According to the acknowledged report of future scenarios by the Rockefeller Foundation and Global Business Network (2010): “Scenario planning is a methodology designed to help guide groups and individuals through the creative process of future visioning. The process begins by identifying forces of change in the world and combining them in different ways to create a set of diverse stories — or scenarios — about how the future could evolve. Scenarios are designed to stretch our thinking about both the opportunities and obstacles that the future might hold. Together, a set of scenarios captures a range of future possibilities that are plausible. Scenarios are not predictions, but they are thoughtful hypotheses that

⁹⁶ <https://www.hel.fi/static/helsinki/kaupunkistrategia/skenaariokartta-kaupunkistrategia-2017.pdf>

allow us to imagine, and then to rehearse, different strategies for how to be more prepared for the future — or more ambitiously, how to help shape better futures ourselves.”⁹⁷

Scenarios are based on storytelling. A story helps illuminate the past, present, and future, thus lighting up the paths of change. Stories are built upon shared values, actions and emotions and they carry insight, concepts, and experiences. Collective stories have neither a beginning nor an end; they grow like trees: they are here before us and will stay long after us. Stories are man-made, but at the same time they reflect everything around and beyond us. Stories are a powerful way to engage people in a strategic change in the future.

In a co-creation, such as a design sprint, a story has many different qualities that make it useful. It is a direct route to our emotions, it creates meaning out of patterns, it engenders empathy across difference, and it enables the possible to feel probable in ways our rational minds cannot comprehend. Stories are essential strategic tools: when it comes to changing the values, mindsets, rules, and goals of a system, a story is foundational.⁹⁸

There is a famous tradition of visionary future stories by architects: Italian Futurism (1909-1944), Frank Lloyd Wright (1867-1959) and Buckminster Fuller (1895-1983) in the US and the Archigram group (1961-1974) in the UK, among others. Contemporary visionaries include Rem Koolhaas, Bjarke Ingels, Carlo Ratti, and Liam Young, to name but a few.

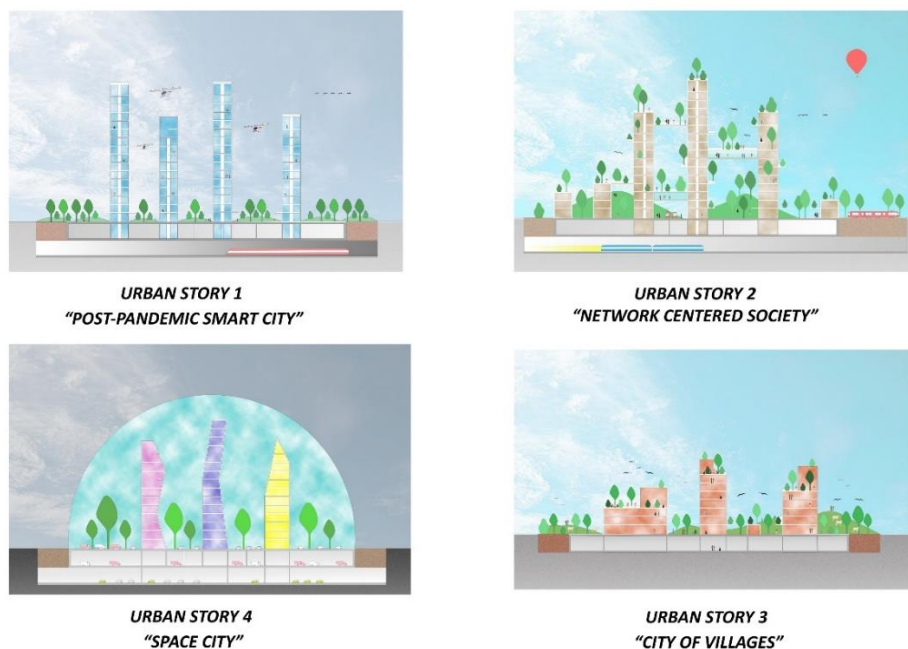
The *FutureSprint 2030* study and the workshops were based on the scenario process, where four different scenarios of the future of architecture were developed as a basis for discussion. In addition, four related architect personas, one for each scenario, were created to support a more empathic and in-depth approach. The scenarios and the respective personas were discussed in the workshops to better understand the challenges and opportunities of each scenario, and the future role of an architect as a *changemaker* in that context.

The persona stories were created to illuminate new pathways for an architect’s role in specific scenarios. Personas show the more individual and detailed perspectives of the general level scenarios. Personas also serve as reflection points for a value discussion in evaluating different alternative paths towards the future from an individual point of view. Creating personas is applying the human-centric approach of design thinking to scenarios.

97

https://www.academia.edu/42904542/Scenarios_for_the_Future_of_Technology_and_International_Development

⁹⁸ https://ssir.org/articles/entry/using_story_to_change_systems#



Picture 2. FOUR URBAN STORIES: The four scenarios of the future of architecture. FutureSprint 2030. Stenros & Geitel & Takala, 2020-21.

3. EXECUTION: Cocreating and Sensemaking Together

During the project, altogether four virtual workshops took place with different groups of participants. The first workshop was for Finnish architects, the second for international architects, the third for a group of global MBA students from Aalto University, and the final one for an invitation-only audience of Finnish architects. In each workshop, the scenarios and personas were tested and later redesigned. Specifically designed virtual canvases were used during the workshops. In the end, we had four major scenarios and architect personas based on an interactive and iterative process. The four scenarios represent the current understanding of the future of architecture as seen during the times of COVID-19 and its aftermath.

In the FutureSprint process we approached the theme on three different levels: micro, meso, and macro.

1) Micro Level – Understanding People, Place and Context: Identifying and creating future personas by *redefining* primary actors, their needs and desires with a focus on lifestyles, practices, hopes and concerns.

2) Meso Level – Co-creating Future Stories: *Reframing* the key scenarios for the future vision with a focus on trends, frameworks, challenges, and opportunities embedded in the context.

3) Macro Level – *Rewriting* the Future Narrative: Specifying elements, patterns, requirements and solutions for the vision concept with a focus on values, ideologies, and economics driving the future architecture and urban planning.

1) Micro Level: The Personas

The impact of the pandemic on the next generation of young architects is evident – the fear and loss, the peculiarities and wonders of virtual schooling, the added responsibilities they face as the world recovers. What are the consequences of the pandemic to the students starting their architectural studies in 2020? How are they going to rebuild a society that is more resilient, more inclusive, more sustainable, and more just? *Generation Snowflake* – as they are also called – values authenticity, simplicity, honesty, and humour. They are creative, energetic, and resilient even in the face of fear and uncertainty. How are they rediscovering and reimagining a radically different future in the post pandemic times?⁹⁹

As two examples of future architect personas, we introduce (A) *Ada* and (B) *Jacob*:

(A) *ADA* – *Living and working in a small town:*

Ada lives in a co-housing apartment building – a pioneering project from the early 2020's. She oversees the Best Planet chapter in her town and is actively involved in local building initiatives and policies for a more resilient and fairer world. She chooses to travel by land and volunteers in several locally important grassroot actions. After graduating, she travelled by train around Asia from village to village, gathering local knowledge on building and materials. She considers herself an architect with a collective mindset and a shared vision of a better planet. She believes in doughnut economics and supports the next generation feminists with a twist. Her idols are Julia Watson (Lo-TEK, Design by Radical Indigenism) and Greta Thunberg. Her driving forces are empathy and helping others by building an open culture of trust. "We stepped into the world as it was starting to fall apart". Her motto: Be the change you want to see. – Ada is changing the world through her inspiration, step by step. Ada is A CATALYST with a Visionary Mindset and a strong sense of purpose.¹⁰⁰ (Scenario: City of Villages)

⁹⁹ TIME – Double Issue June-July 2020: Generation Pandemic.

¹⁰⁰ The *Personas* created for the *FutureSprint 2030 – Four Urban Stories* project

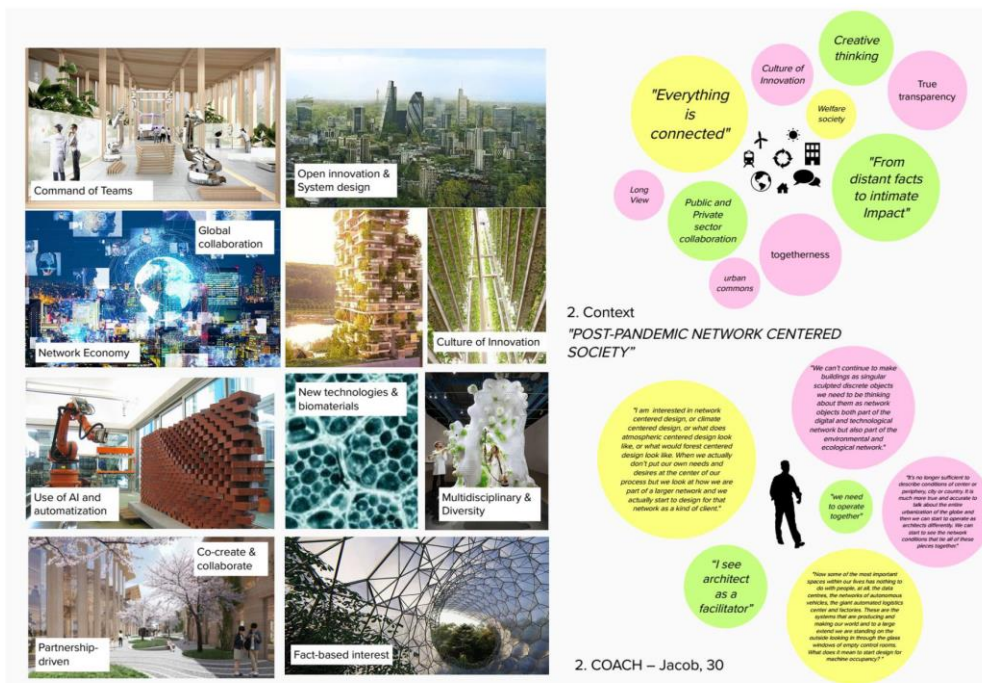


Picture 3. FOUR URBAN STORIES: *Persona ADA*. Example of the materials (virtual canvases) used in the co-creation workshops. FutureSprint 2030. Stenros & Geitel & Takala, 2020-21.

(B) *JACOB – Living and working in a mid-size city:*

Jacob is enthusiastic about facts vs. fake. Already as a student, Jacob focused on fact-based topics of his architectural studies: engineering, new technologies and biomaterials, and the use of AI and automatization in designing and building. His passion is to work collaboratively and to co-create the change needed for a more resilient society, world, and planet. He has spent several summers abroad in architectural master classes for students and is building a strong network of like-minded young colleagues. Recently, he applied to the doctoral program at the local university to study agile co-creation and self-organisation in architecture. His idols are Christopher Alexander (Pattern Language) and Ed Catmull (Creativity Inc.). His driving force is building a strong team culture between different partners and helping others to thrive. “I’m considering taking a gap year to study more – a lot of my friends have as well.” His motto: Together we are stronger. – Jacob is changing the world by guiding others. Jacob is A COACH with a Creative Mindset and the sense of collective ideas and innovations.¹⁰¹ (Scenario: Network Centered Society)

¹⁰¹ Ibid.



Picture 4. FOUR URBAN STORIES: *Persona JACOB*. Example of the materials (virtual canvases) used in the co-creation workshops. FutureSprint 2030. Stenros & Geitel & Takala, 2020-21.

2) Meso Level: The Scenarios

The detailed context of the architecture scenarios in 2030 is further imagined based on the guideline scenarios published in recent years, such as Arup’s *2050 Scenarios* (2019)¹⁰² and the *Scenarios for the Future of Technology and International Development* (2010)¹⁰³ by the Rockefeller Foundation. Both are based on a framework presenting four plausible futures.

Urban Story 1 – Post-Pandemic Smart City: Redefining Big Tech

In the Post-Pandemic Smart City, everything is digitalized, well organised, safe, and carefully controlled. The balance between technology and people is under constant scrutiny. Are people serving the technology and not the other way around? Government has far-

¹⁰² <https://www.arup.com/perspectives/publications/research/section/2050-scenarios-four-plausible-futures>

¹⁰³ https://www.academia.edu/42904542/Scenarios_for_the_Future_of_Technology_and_International_Development

reaching powers, and countries collaborate to maintain control. Actions to slow down climate change and improve planetary health are enabled by strict rules and regulations.¹⁰⁴

Megatrends: Digitalization, Automatization, Rethinking Density, Big Tech

Drivers: Safety & Security, Trust & Transparency, Big Data, Big Health, Tech Innovations

Urban Story 2 – Network-Centred Society: Redesigning Public Space

In a Network-Centred Society, everything is connected and considered part of a larger ecosystem. Societal conditions and planetary health co-exist in harmony and build up each other for mutual progress and benefit. Governments engage in cross-border collaboration, and partner with private sector actors to advance their causes. Everything is highly digitalized, and technology and AI serve the people, not the other way around. Society is safe and conducive to innovations, and the level of education globally is high. Planetary health is taken into consideration in all decision-making. Sustainability is no longer considered a separate entity or issue, as it is accepted that everything is connected and impacts everything else. Human centric design has morphed into network centred design.¹⁰⁵

Megatrends: Welfare Society, Long View, Network Economy

Drivers: Global Collaboration, Open Innovation & Systems Design, Social Innovation

Urban Story 3 – City of Villages: Rebuilding Community

In the City of Villages societal conditions advance at the cost of planetary health. Governments are acting independently with occasional cross-border collaboration. All reforms are slow in the making, people and grass root actions are needed to support change and challenge the status quo. Digitalization is slow and different kinds of low-tech solutions are common, also off-the-grid style living, moving to the countryside and working remotely are gaining popularity. Local services are decentralized, and cities are becoming networks of small walkable villages. Urgent action to slow down the deterioration of the planet is vital, and a lot of initiatives to that end are made, but their execution is scattered to different actors, as there is no coherent global strategy to tackle these issues.¹⁰⁶

Megatrends: Decentralized Local Services, Circular/Doughnut Economy, Nation State

¹⁰⁴ The Scenarios created for the *FutureSprint 2030 – Four Urban Stories* project

¹⁰⁵ The Scenarios created for the *FutureSprint 2030 – Four Urban Stories* project

¹⁰⁶ Ibid

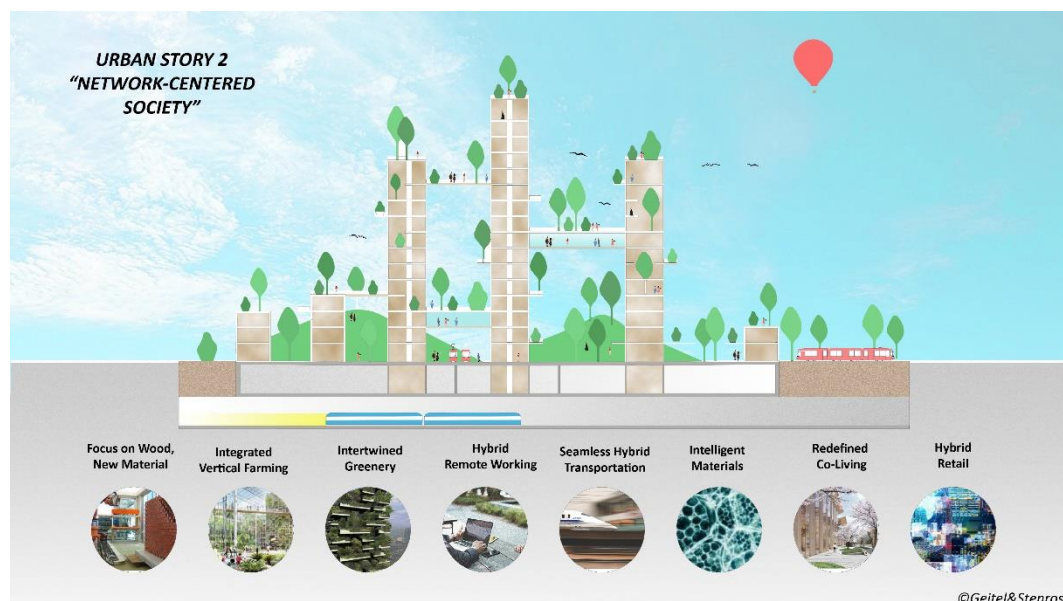
Drivers: Stakeholder Capitalism, Planet Centric Design, Hacking Innovation

Urban Story 4 – Space City: Reimagining the City

In the Space City, the public sector is extremely weak and almost everything is run by the private sector. There are no coherent visions on the global or local level. Security is severely compromised everywhere. Gated communities are a global phenomenon. The health of the planet and societal conditions are deteriorating rapidly, and no real measures have been taken to prevent it. Gene manipulated crops take an increasingly important role as the greater part of the world's arable land is slowly turning uncultivable. Innovations are dependent on private funding and lack any control or benefit for the greater good. Outer space offers tempting opportunities to create the cities of the future.¹⁰⁷

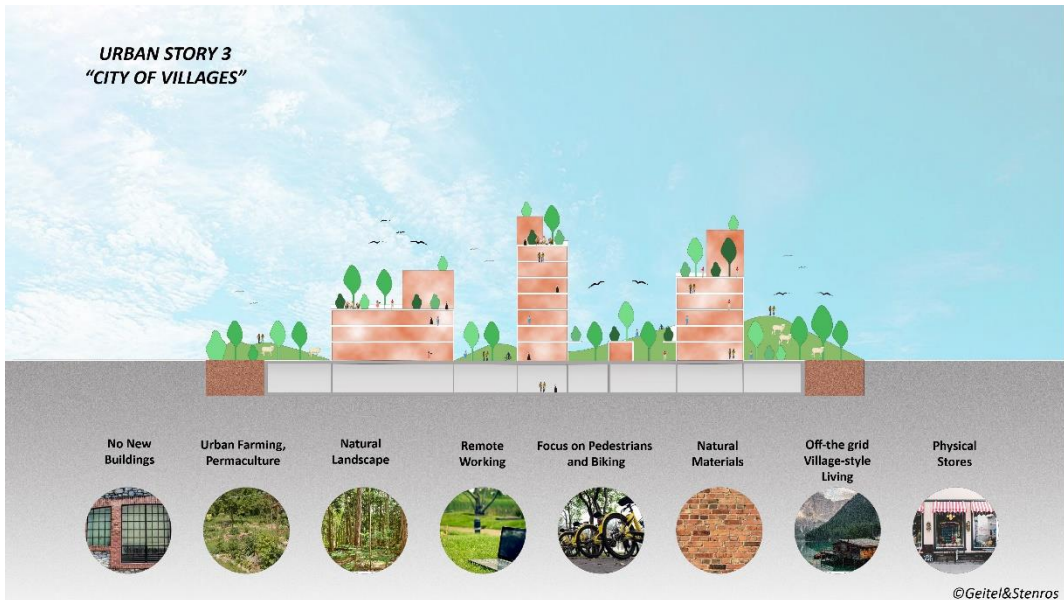
Megatrends: Global Uncertainty, Diversity, Rethinking Building Types

Drivers: Entrepreneurship, Alternative Financing, New Markets, Provocative Innovation



Picture 5. FOUR URBAN STORIES: *Urban Story 2 – Network-Centered Society*. Future Architecture Scenarios 2030. FutureSprint 2030. Stenros & Geitel & Takala, 2020-21.

¹⁰⁷ Ibid



Picture 6. FOUR URBAN STORIES: *Urban Story 3 – City of Villages*. Future Architecture Scenarios 2030. FutureSprint 2030. Stenros & Geitel & Takala, 2020-21.

3) Macro Level: The Next Narrative

In a transformation or systems change, the first thing is to understand the *Now*, then the *Transformation* itself and finally the *After*. Sometimes we can even sense and see the *Next*. All these elements create the narrative from present to the plausible future.

The Now:

It is obvious that the pandemic has compressed time in our present life. We have witnessed what were only weak signals suddenly become strong trends with fast progress, such as the upheaval of remote work and the new virtual normal, or the health and safety issues that come with social distancing. All these work and lifestyle changes will have an impact on the future development of architecture and urban design. Living through these times of several crises in health, social, and climate will have a major impact on and change urban development.

Many studies show that we have a severe wellbeing crisis. It is clear the pandemic took a toll on emotional wellbeing. Mental health was one of the casualties both of the pandemic and of the resulting lockdowns. As the pandemic struck, there was a large and immediate decline in mental health worldwide. A major element in COVID-19 policy has been

physical distancing or self-isolation, a significant threat to people's social connections, which are vital for their happiness.¹⁰⁸

The Change:

The more we understand the future drivers and the emerging needs and desires, the better we can adapt and solve emerging crises through architecture, design, and urban planning. In the future, the discipline of architecture, design, and planning will be based on systems thinking and will focus more on innovative goal setting than solving unique problems. The latter will be done by technology and especially by AI-driven design solutions. Creativity will be needed first and foremost in leading data- and digitally- driven design: how to set the goals and the constraints in such a way that the result is a built environment which is more human, sustainable, equitable and inclusive.

The After:

In architecture and urbanisation, there are four plausible future directions: (1) The new version of a smart city, where human-centredness, the natural environment and local culture are the key building blocks of urban design. (2) A network-like collaborative ecosystem of independent neighbourhoods and/or cities sharing knowledge and learnings. (3) A bottom-up, village-like, inclusive and experimental urban living lab and (4) A range of utopias designed by famous architects as unique solutions for a particular location and context. All these visions have *an emphasis on the wellbeing experience of individuals, community and nature*, and therefore focus on *the human-nature connection and a strong sense of community spirit*.

The first concept emerging to the wider discussion is the idea of the *15-Minute City* by Professor Carlos Moreno. The mayor of Paris suggested that the entire city should be developed based on this idea. According to Moreno, the 15-minute city is the key to sustainability, resilience, and place identity in future post-pandemic cities. Moreno advocates for an urban set-up where locals can access all their basic, essential services at distances that would not take them more than 15 minutes by foot or by bicycle. The urban built landscape needs to be restructured to ensure that it complies with components such as proximity, diversity, density and ubiquity, which Moreno opines to be major concerns in the pursuit of cities offering an urban life that could be categorized as being of high value.¹⁰⁹

The second major idea is the *Biophilic City*, paving the way for rebuilding the human-nature connection in urban environment. The network of Biophilic Cities partners with cities, scholars and advocates from across the globe to build an understanding of the value and contribution of nature in cities to the lives of urban residents. The partner cities work collectively to pursue the vision of a "natureful" city within their unique and diverse environments and cultures. This concept acknowledges the importance of daily contact with

¹⁰⁸ <https://happiness-report.s3.amazonaws.com/2021/WHR+21.pdf>; p. 10

¹⁰⁹ <https://www.mdpi.com/2624-6511/4/1/6/pdf>

nature as an element of meaningful urban life, as well as the ethical responsibility that cities have to conserve global nature as shared habitat for non-human life and people.¹¹⁰

Finally, architect Bjarke Ingels and BIG launched the *Masterplanet* vision, which is an attempt to redesign earth and stop climate change. Masterplanet is a concept for designing a more sustainable way of living for the entire world. Approaching Earth like an architect master planning a city, Ingels calculates that even a predicted population of 10 billion people could enjoy a high quality of life if environmental issues were tackled holistically.¹¹¹

There is a growing public interest in urban renewal, showing the way towards the *post-pandemic city which is more human-centric, sustainable, and nature-driven by character*. All recent ideas emphasize the role of green and blue spaces, parks, nearby nature, and sustainability as a core element of the urban development. The positive effect of nature is not only seen as a human health issue but also an aspect of holistic wellbeing. The revitalizing, regenerative and restorative effect of nature is seen as essential for human and planetary wellbeing. Supporting community spirit and neighbourhood health is also part of the overall wellbeing experience and quality of life. All these aspects are also tackling the current crises that we have: the presence of pandemic, climate, and wellbeing crises.

4. VISION STORY: The Next Urban Narrative

There is a strong connection between happiness and human-nature connection. Growing evidence in psychology suggests that being exposed to green, natural environments improves mental wellbeing, including a reduction in stress, a rise in positive emotions, cognitive restoration, and positive effects on self-regulation. Green, natural environments also have an indirect positive impact by encouraging certain behaviors, for example physical exercise or social interaction, through the provision of public, open space, which improves mental and physical health and longevity, and thereby overall happiness.¹¹²

In his valued book *The Nature Principle – Reconnecting with Life in a Virtual Age* (2012), journalist Richard Louv presented already ten years ago the idea of living in a *restorative city*, by stating that there is a natural urban renewal movement, following the footsteps of the Garden Cities movement. According to Louv, in the twenty-first century, the most vibrant cities will be those that integrate the population into an urban environment enriched by both natural and re-natured habitat. This idea of rewilding cities – not only creating green infrastructure, but also consciously increasing the wildlife population and urban biodiversity – is in the very heart of the future city.¹¹³

¹¹⁰ <https://www.biophilicities.org/our-vision>

¹¹¹ <https://www.dezeen.com/2020/10/27/bjarke-ingels-big-masterplanet-climate-change-architecture-news/>

¹¹² https://happiness-report.s3.amazonaws.com/2020/WHR20_Ch5.pdf

¹¹³ Louv, Richard. *The Nature Principle – Reconnecting with Life in a Virtual Age*, 2012, p. 197-200

The origin of restorative, nature-centric cities is the Garden City movement. One of the modern versions was the Tapiola neighborhood in Espoo, Finland, which was built in the 1950s and 1960s on the principles of Ebenezer Howard's garden city. Tapiola was the largest and most valuable example of 1960s city planning and building ideologies in Finland. Tapiola was also one of the first post-war "new town" projects in Continental Europe. The original city plans and the buildings were designed by a group of prominent Finnish architects. Tapiola was a result of close teamwork in the fields of architecture, sociology, civil engineering, landscape gardening, and youth welfare.¹¹⁴

The strong Nordic heritage of building in balance with nature leads to the more general idea of *nature wisdom in planning, building and living*. The importance of urban green spaces and blue spaces as well as the meaning of community bond, belonging, and the sense of place are essential for the healthy habitat. *The Next Urban Narrative is returning to our collective roots of living together, not only among human beings, but with all living things. To see the world through the lens of oneness to the whole is the lasting way to climate adaptation and the path towards the sustainable development of the urban humankind.*

All four urban scenarios presented in our study fit well under the umbrella of nature-centric cities. Since cities can be seen as forests: they are individuals, they have an identity and personality like any other ecosystem. The more diverse they are, the better their resilience, and therefore their diversity should be sustained. The growing network of biophilic cities, eco smart cities and eco villages are all parts/ecosystems of the overall urban system.

The four elements of nature-centric cities are (1) BLUE: Regenerative spaces designed for holistic wellbeing, (2) GREEN: Revitalizing spaces of healthy habitat and living, (3) RED: spaces supporting community spirit and resilience, and (4) WHITE: Restorative spaces creating pause in time and the sense of oneness with nature. The overall impact of these elements is rebuilding not only the human-nature connection, but the holistic sense of happiness: doing and living well in harmony with nature. Supporting this nature-centric approach with circular design and biophilic design, micro localism, and the idea of circular and doughnut economy, lead to the idea of the next urban future: the *Nature Smart City*.

The four principles of redesigning the Nature Smart City are:

1. *Redefining Smart & Sustainable: the SLOC (Small-Local-Open-Connected) model by Ezio Manzini*¹¹⁵
2. *Rebuilding Community Spirit: Placemaking as an approach and philosophy for planning and co-creating with local people*
3. *Rethinking Social Wellbeing: Inclusive Design, empathy design and design for all*

¹¹⁴ <https://en.wikipedia.org/wiki/Tapiola>

¹¹⁵ <http://www.ecologiapolitica.org/wordpress/wp-content/uploads/2014/03/Resilient-systems-and-cosmopolitan-localism.pdf> p. 5-6

4. *Reimagining* Human-Nature Connection: *Biophilic Design* and biophilic architecture

The best urban environment supports feelings of safety and belonging, as well as strong human-nature connection. This kind of environment is creating and nurturing *the resilience of the community and the resilience of nature*.

5. CONCLUSION: Towards the Nature-Smart Society

Psychologist Howard Gardner, who has created the theory of multiple intelligences,¹¹⁶ added later to the list the ‘eight intelligence’: *naturalistic intelligence* or *nature smart*. This intelligence is about how sensitive an individual is to nature and the world. People endowed with this form of intelligence typically are interested in growing plants, taking care of animals or studying animals and plants. They care about the environment and like to be in touch with nature. They express a desire to understand how things work, and they find patterns in nature. These are the people who see both the forest and the trees.¹¹⁷

One aspect of nature wisdom is learning from the past, much like mother trees in the forest are sharing knowledge through their underground roots. Learning from Vitruvius, who saw architecture as an imitation of nature and the proportions of the human body as an ideal model for the entire city, or the way indigenous people used to build their adobes – all the way to the garden city movement and the future of rewilding cities. We should listen to and learn from the local wisdom of designing, planning, and building in a specific location by respecting its nature. *Architecture and cities should be seen part of the mother tree tradition: sharing the long-lasting wisdom on how to live in harmony with one another and nature*.

Already ten years ago, Ezio Manzini presented a resilient model for human habitat, social wellbeing and innovation. He stated that resilient systems and cosmopolitan localism are two sides of an emerging scenario which he called the SLOC scenario, where SLOC stands for Small, Local, Open, Connected. Each one of these adjectives and its implications are easily understood, but together they generate a new vision of a sustainable, networked society. In his view, this SLOC scenario could become a powerful social attractor, capable of triggering, catalysing and orienting a variety of social actors, innovative processes and design activities.¹¹⁸

The recent article on nature-based solutions (NBS) applied in architecture and urban planning shows several urban design projects that introduce NBS to provide sustainable management of ecosystems to tackle different environmental challenges. The article shows how these solutions can reconnect the local population with nature, mitigate air pollution, improve thermal comfort in the cities, reduce the effect of urban heat islands, and manage

¹¹⁶ The Theory of Multiple Intelligences was first presented in 1983 by Howard Gardner in his book *Frames of Mind*.

¹¹⁷ <https://www.iberdrola.com/talent/naturalistic-intelligence>

¹¹⁸ <http://www.ecologiapolitica.org/wordpress/wp-content/uploads/2014/03/Resilient-systems-and-cosmopolitan-localism.pdf> p. 5-6

stormwater runoff, among many other benefits to the environment and to the physical and mental health of urban dwellers.¹¹⁹

These examples of a naturalistic approach in designing and building communities, neighbourhoods, and entire urban areas call for a new kind of thinking and doing, knowledge and skills. In our current digital and virtual world, we have lost our inherent connection to nature and our natural ability to understand the natural world around us. The human-nature connection has lost its meaning in people's life. In the digitalisation era, we have moved from real-life experiences to virtual experiences. Interestingly, based on latest customer insight, we are moving towards more tactile life at home as a contrast to the digital world. *The question remains how to harvest our naturalistic intelligence and wisdom?*

The post-pandemic world is based on the balance of the human and planetary wellbeing. Rewilding and oneness with nature are the new building blocks of holistic wellbeing, healthy life, and a healthy planet. Restoring and rebuilding our interdependence with the environmental systems is the very essence of this development. *How to design for future happiness, doing and living well, in harmony with nature?* – That is the grand challenge of our time and the future. In an era of great reinvention, we are moving from a tech-smart society to a *nature-smart society* – and we must learn how to *think like a naturalist*.

Our narrative of architecture futures started from the role of an architect and developed during the pandemic year to the question of the ethical values of architecture in relation to human beings, discipline, environment, and planetary boundaries. The only thing that is solid in this ongoing change is the old truth by architect Louis I Kahn: *“Architecture Is”*.

When considering Nature Smart City as a system of co-existing ecosystems, there are still many questions to be answered in the future:

- Urban ecosystem management
- Ecosystem dynamics
- Ecosystem complexity
- Multi-layered ecosystems
- Balancing ecosystems
- Monitoring ecosystems
- Ecosystem narratives

We are only beginning to understand the opportunities afforded by naturalistic intelligence in designing nature smart urban ecosystems and society. We should contemplate the wisdom of Japanese botanist Akira Miyawaki, who created the famous Miyawaki method of planting trees and growing natural urban forests for restoring biodiversity:

¹¹⁹ https://www.archdaily.com/964460/6-urban-design-projects-with-nature-based-solutions?utm_medium=email&utm_source=Notifications&utm_campaign=daily&kth=5883860

*"I am still only eighty-six years old! It is a sign of vitality that I continue to work.
I'll plant trees with people for the next thirty years".¹²⁰*

- Akira Miyawaki

REFERENCES

- [1] Alter, Charlotte. *How COVID-19 Will Shape the Class of 2020 For the Rest of Their Lives*, TIME, Generation Pandemic Double Issue, June-July, 2020
<https://time.com/magazine/us/5840178/june-1st-2020-vol-195-no-20-u-s/>
- [2] *Apoli2020*, New architectural policy programme for Finland, Ministry of Education and Culture, Finland, 2021; <https://minedu.fi/en/apoli2020>
- [3] *Biophilic Cities*, A global network of partner cities;
<https://www.biophiliccities.org/our-vision>
- [4] Gardner, Howard. *Frames of Mind: The Theory of Multiple Intelligences*, 3rd edition, Basic Books, New York, (1983) 1993 anniversary edition
- [5] Krekel, Christian & MacKerron, George. *How Environmental Quality Affects Our Happiness*, World Happiness Report 2020; https://happiness-report.s3.amazonaws.com/2020/WHR20_Ch5.pdf
- [6] Louv, Richard. *The Nature Principle – Reconnecting with Life in a Virtual Age*, Algonquin Books of Chapel Hill, New York, 2012, 197-200
- [7] Manzini, Ezio. *Resilient systems and cosmopolitan localism — The emerging scenario of the small, local, open and connected space*, 2014;
<http://www.ecologiapolitica.org/wordpress/wp-content/uploads/2014/03/Resilient-systems-and-cosmopolitan-localism.pdf>
- [8] *Masterplanet* by Bjarke Ingles; <https://www.dezeen.com/2020/10/27/bjarke-ingels-big-masterplanet-climate-change-architecture-news/>
- [9] Miyawaki, Akira; <http://akiramiyawaki.com/>
- [10] Moreno, Carlos, Allam, Zaheer, Chabaud, Didier, Gall, Catherine, Pratlong, Florent. *Introducing the “15-Minute City”: Sustainability, Resilience and Place Identity in Future Post-Pandemic Cities*, Smart Cities 2021, 4, 93–111;
<https://www.mdpi.com/2624-6511/4/1/6/pdf>

¹²⁰ <http://akiramiyawaki.com/>

- [11] *Naturalistic Intelligence*; <https://www.iberdrola.com/talent/naturalistic-intelligence>
- [12] Saltmarshe, Ella. *Using Story to Change Systems*, Stanford Social Innovation Review, Feb 20, 2018; https://ssir.org/articles/entry/using_story_to_change_systems#
- [13] *Scenarios for the Future of Technology and International Development*, Rockefeller Foundation and Global Business Network, 2010, 9; https://www.academia.edu/42904542/Scenarios_for_the_Future_of_Technology_and_International_Development
- [14] Stenros, Anne, Geitel, Eva, Takala, Minna. *FutureSprint 2030 – Four Urban Stories*, 2020-21.
- [15] Stenros, Anne & Takala, Minna. *Helsinki City Scenario Map 2030*, City of Helsinki, Finland, 2017; <https://www.hel.fi/static/helsinki/kaupunkistrategia/skenaariokartta-kaupunkistrategia-2017.pdf>
- [16] *Tapiola*, <https://en.wikipedia.org/wiki/Tapiola>
- [17] *World Happiness Report*, the United Nations, 2021, 10; <https://happiness-report.s3.amazonaws.com/2021/WHR+21.pdf>
- [18] *2050 Scenarios*, ARUP's Foresight, Research and Innovation & Sustainable Development Teams, 2019; <https://www.arup.com/perspectives/publications/research/section/2050-scenarios-four-plausible-futures>
- [19] *6 Urban Design Projects With Nature-Based Solutions*, ArchDaily, 2021; https://www.archdaily.com/964460/6-urban-design-projects-with-nature-based-solutions?utm_medium=email&utm_source=Notifications&utm_campaign=daily&th=5883860