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Imagineering Urban Places: Enhancing the Urban Design Process with a Futures-Driven Approach to Design for Spatial Equity

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Imagineering of cities, or the process of translation of creative and imaginative ideas into a real input to be designed in urban places, is a task to be tackled. Yet another question, whose imagination it is, and how exactly it is produced? Modern urban design has been highly professionalised, as well as largely following the logic of normative and predictive path of city visioning. Following the normative approach to urban design implies using available data for planning, which is based on big sets of data and knowledge available. Contemporary challenges of urban transition require us both to rethink the ways we think about urban places and inhabitants, as well as adopt new methods of engagement in city visioning. Design and futures studies have the potential to aid the design of urban places to become more exploratory and imaginative. At the same time, there is a necessity to find how to “engineer” and put into practice the imaginary and visioning output. On the other hand, there is a need to ensure that cities are designed to accommodate the needs of diverse groups of living beings - human or non-human. Design discipline can provide an opportunity to face both challenges and give a direction of a futures-driven and more-than-human perspective to the design of urban places. The objective of the article is to explore how a design futures-driven approach can inform urban design methodologies to create more inclusive urban futures. It describes the development of the methodology and its implementation in five pilot studies on different spatial scales. The process of the participatory methodology consists of creating, immersing, and developing ideas in various scenarios and mapping them on the masterplans with the help of three sets of cards – (i) What-If

questions cards, (ii) Agent cards, (iii) Design cards. Finally, it discusses the main results and benefits that a futures-driven design approach can bring to urban design.

KEYWORDS: urban design, futures studies, spatial equity, design foresight, participatory design

RSD TOPIC(S): Architecture & Planning, Case Studies & Practice, Methods & Methodology

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Introduction

Jan Gehl, an urban planner and advocate for human-scale urban design, once said, “First we shape cities, and then cities shape us”, adopting a famous quote of Winston Churchill. This duality of relationship makes us, professionals and citizens, responsible for what places and experiences we create in cities. As human beings and designers, we exist in the realm of the Anthropocene. While it can be a contested term by some (Lövbrand et al., 2015; Moore, 2015), it gives opportunities to uncover the impact of human presence on this planet, take responsibility and make an attempt to respond. The Anthropocene can be largely characterised by three main aspects - (i) urbanisation (Pincetl, 2017; Elmqvist et al., 2021), (ii) complexity and wicked problems (Raudsepp-Hearne et al., 2020), and (iii) human-centrism (Baceclar de Castro and Hennessy, 2022). Some of the disciplines are trying to respond to each problematics, namely (i) urban studies to urbanisation as a way to (re)-organise and design cities in environmentally and socially sustainable ways; (ii) futures studies to tackle complexity and wicked problems; (iii) design discipline to human-centrism as a way to shift focus from human-induced impact.

The continuously growing trend of urbanisation has been intensifying ecological and social pressures, and they have become nodes of complex systems intertwined with each other and characterised by path dependency and instability. A variety of urban-related areas aim to tackle these challenges - from urban design urban planning to urban policy. It is becoming clear that new approaches are needed, as, for instance, a

recent field of urban transitions and transformations aims to develop alternative imaginaries with transdisciplinary and co-creative engagement to help to critically reflect on existing paradigms and build “radical pathways towards sustainable urban futures (Frantzeskaki et al., 2018; Hajer and Versteeg, 2019).

At the same time, futures studies is the discipline that strives to tackle the challenges of complexity and uncertainty that require system thinking and abilities to analyse the pathways of future developments. Future and foresight tools can be used to deal with the complexity of systems and investigate assumptions, uncertainties, and outcomes of future designs, assess consequences and anticipate innovative solutions (Szpilko, 2020; UNDP, 2014). Futures methods can be generally categorised into 3 types: predictive, exploratory, and normative (Figure 1), where predictive approach attempts to forecast what the future will look like based on current trends and extrapolations of data, exploratory approach explores a range of possible futures, and normative approach creates a vision of the future and provide a framework for achieving it.

Foresight as a discipline within futures studies covers a wide range of methods to systematically investigate the future, which are not "concerned with predicting the future; rather, [...] with creating it” (Hartmann, 2011). The broad collection of tools and techniques can be summarised as divided into two phases: (i) mapping and (ii) influencing (Figure 2) (Hines and Zindato, 2016), where mapping includes framing, scanning and forecasting, while influencing implies visioning, planning, and acting.

Urban Foresight

On the nexus of Urban Studies and Futures Studies, Urban Foresight appears as an approach to strategically plan cities by investigating the opportunities and anticipating solutions in the future. Traditionally, futures methods in urban planning and design have been used as extrapolations of current dynamics, based on science-based methods of prediction and forecasting, including supply and demand forecasts, modelling of land use development, qualitative surveys of specific target groups (users of public space), or studies of the future developments in specific areas related to urban context, such as the future of work, or future of mobility (Toivonen et al, 2021). Urban foresight, as a term as such, has mainly originated when “territorial foresight” has emerged which focuses on creating visions and strategy planning as a way for regions

and cities to debate and think about their long-term visions (Fernández-Güell and González López, 2016; Dixon et. al, 2018). Looking through the prism of futures studies approaches (Figure 1), and after analysis of collected and reviewed case studies of foresight tools and techniques in the urban field, they can be largely categorised as predictive and normative, leaving the exploratory category a not well researched and applied area in urban design (Figure 2).

However, the uncertainties of the world are often beyond our ability to predict, which might make predictive and normative urban visions less efficient. As S. Candy (2010) said that future thinking is often limited to determining a 'perceived probable future' by modelling, predicting and forecasting the most likely course of events, and in case of designing urban places, it appears to be so. Thus, there is a need to expand and improve the tools in designing places for anticipating and providing means to adapt to multiple potential futures" (Childs, 2020) and move urban design to the exploratory scene. While many exploratory and speculative approaches have been applied to urban-related contexts, there is no method that would allow these approaches to be integrated and mainstreamed in the urban design process, as there is a "fear" or urban professionals that it will undermine the design quality (Giseke, et al., 2021). Integration of 'exploratory' approach in the design of urban places should both be exploratory and imaginative in its essence, but complementary to the real designs of cities.

At the same time, a big problem is that both disciplines, foresight and urban design approach envisioning cities in different ways. As Fernández-Güell and González López (2016) framed it, foresight professionals tend to ignore spatial challenges, whereas urban planners pay less attention to socioeconomic trends or alternative methods of working with the futures. While, foresight practitioners excel in the futures techniques and are capable of contextualising uncertainties, spatial practitioners excel in visually synthesising the complexity of urban visions. "Instead of exchanging expertise and becoming complementary, both positions remain isolated in their own "comfort zone", affecting the quality of urban visions. In other words, doubts arise about the appropriateness of the foresight tools used by urban planners and about the understanding of foresight practitioners of the complex and dynamic nature of contemporary cities" (Fernández-Güell and González López, 2016).

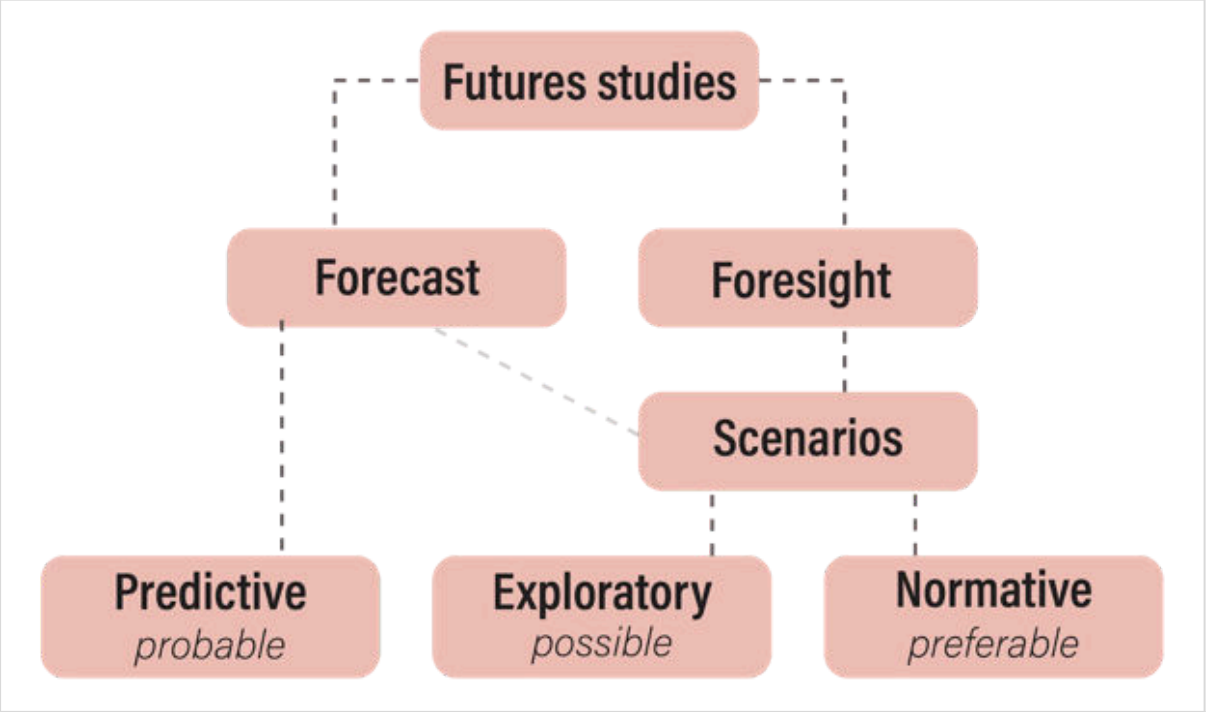


Figure 1. Visualisation of the divisions of futures studies (Source: Authors, 2023)

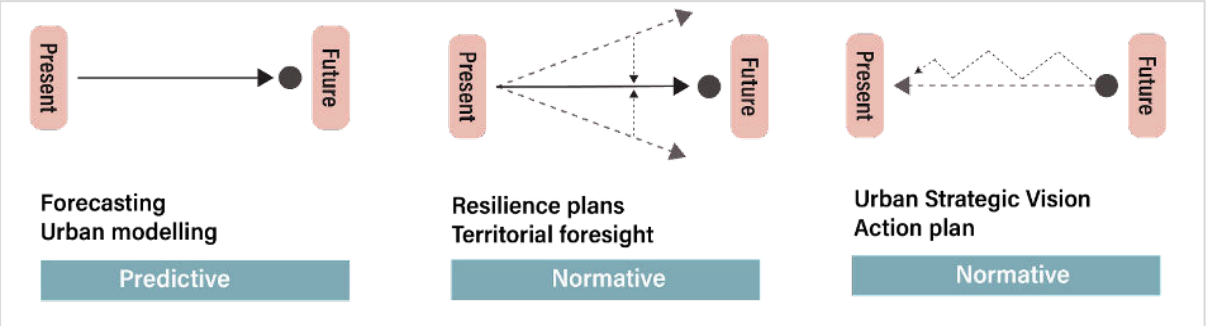


Figure 2. Typology of Urban Foresight techniques according to the Futures Studies approaches (Source: Authors, 2023).

The role of design in urban foresight

Navigating this broad gap, we explore design as a discipline which could enable translation between Urban studies and Future Studies in an applied way. Design discipline shares a lot with future studies, as they both devise the future course of development. Future studies provides a framework for design discipline to explore a variety of futures - probable, preferable, possible (Dator, 2009). Dunne and Raby (2013) claim that design can allow an individual to observe future opportunities in order to better understand the present. Various design foresight techniques, such as design futures, speculative design, design fiction are focused on asking “carefully crafted questions”, rather than on solving problems (Dunne and Raby, 2013). They offer an alternative way to traditional futures-oriented approaches such as strategic foresight to explore the future and create an empathy with future possibilities (Engholm, 2023). Another relatively new area of design practice is Transition Design that advocates a design-led societal transition toward more sustainable futures. Its concept requires a vision, integration of knowledge, and a need to think and act at different levels of contextual scales - relationships, connections, and place. Transitions though require new design approaches informed by different sets of values and knowledge (Irwin et al., 2014), but they should be based upon a deep understanding of the dynamics of change within complex social and natural systems, which is currently missing from the design research in urban transformations. Design-driven approaches and future studies can enhance the transformative capacity of cities which is one of the crucial aspects enabling urban transformations (Wolfram et al. 2016) as they can help to create “temporary transformative spaces” as safe collaborative environments to imagine futures (Pereira et al. 2020).

Spatial equity in urban design

Another problematics posed by Anthropocene which was outlined and needs to be addressed is human-centrism by enhancing spatial equity in cities. Human-centrism has been dominating many fields, from designing products to places. If adopting a human-centred and human-scale design was a great achievement in the field of urban design (Gehl, 2010), it has also created a number of problems of anthropocentric origin, which pushes us to rethink the way we live and create. First, it is more appropriate to say that cities have been created in a man-centred way, and it mainly responded to their

existing behaviours and uses. As a result, the figure of a man has informed the needs of all other users in cities, which, as Saskia Sassen noted, made the practice of urban design far from gender neutral (Sassen, 2015). Spatial equity needs to become a core guiding principle in urban design and should come not only in the form of gender, but also age, abilities, ethnicity, and other factors. Second, there is an emerging consensus that the health of the planet depends on the coexistence between rapidly growing cities and the natural world. Being a result of human-centred and profit-oriented approach, Anthropocene forced us to rethink how humans engage with nature (Esguerra, 2019; Mansur et al., 2022). If humanity is to achieve a more sustainable and prosperous future, it is critical to open up a space for more plural perspectives of human–nature relationships (Pereira et al., 2020), so there is a need to move away from the dominant human-centred approach and integrate non-human perspectives in urban design (Rice, 2017). Design discipline addresses this problem with a variety of approaches such as more-than-human centred design. Thus, the one of the objectives of the research is driven by the goal to identify a space for a new approach to enhance the design of spatially equitable urban places by borrowing insights from futures studies and design disciplines.

Research Gap

The broad question is how can design-driven and in particular future-oriented design enhance urban foresight? Futures and foresight approaches have been used in urban context, but often in a normative and predictive approach by using modelling and forecasting techniques. To a lesser extent, but still participatory foresight has been also used with different stakeholders, such as urban planners, architects, municipality officers, and sometimes citizens to identify the desired vision of the places and cities. However, even though urban foresight is one of key factors and capacities to enable (or constrain) sustainable urban transformations and enhance urban design, it has been largely understudied (Wolfram et al., 2016), and still using predictive foresight methods. In this way, designing for urban places should include more robust tools to envisage potential futures (Childs, 2020), including the underrepresented “exploratory” function of foresight. Therefore, it is important to explore the potential of futures-driven design

methods in urban design using new creative and imaginative approaches as a way to construct new methods and meanings in the field of urban foresight.

At the same time, there is a necessity to understand how a futures-driven design method can be applied to the urban design process in a way that would be relevant for the urban design practice. Enhancing the role of "exploratory" futures (in contrast to normative and predictive), there is a need to overcome the resistance of urban professionals to use imaginative approaches to integrate into the design process (Giseke, et al., 2021). Thus, there is also a need to understand how a futures-driven design approach can be integrated in the process of designing new places in a way that is productive and strategic.

Lastly, urban design is still far from being inclusive as a result of path dependency of man-centred city planning, excluding a wide variety of groups in the design process. In addition, a relatively new field of more-than-human centred design gives an opportunity to explore the inclusion of non-human stakeholders in cities. Thus, there is a need to understand if and how the futures-driven design approach can contribute to spatial equity in cities. To sum up, the future of urban design needs to include more robust tools to envisage potential futures (Childs, 2020). Dealing with these challenges can help designers, urban professionals and communities to imagine, plan and foresee the future of urban places in a more efficient way.

Methodology

Embedding futures-driven design approach into urban design process

The methodological process of building a new approach entails the following steps:

1. Position Urban Foresight in relation to futures-oriented approaches to reveal the gap and identify a 'space for exploration' as a starting point to building the approach and method;
2. Outline characteristics of futures-driven design approach which can empower urban foresight's role in the identified 'space for exploration';
3. Map urban design process and understand which phases of it can be empowered;
4. Outline the method to activate it with the futures-driven characteristics.

1. Positioning urban foresight

It was revealed in the literature review that urban foresight largely remains in the area of predictive and normative approaches to the futures, leaving a little space for exploratory techniques which could be integrated into the urban design process in a practical way. Borrowing Buhring's (2022) positionality of design approaches in relation to a variety of future-oriented goals, it is possible to map urban design and foresight techniques on the futures timeline in relation to their objectives. However, it is not to say that these techniques (both design and urban design) exist in indicated silos of the futures timeline, but it is rather a broad representation of the discipline areas in relation to the main objectives carried out at each phase. Mapping urban futures methods demonstrates that (i) urban design corresponds to assessing of and responding to the current needs of urban population and places; (ii) urban foresight responds to assessing future risks and opportunities based on forecast and analysis; while (iii) urban strategic visions aim to build a shared future vision, usually on city or regional level (Figure 3). Thus, a 'space for exploration' was identified at the silo of envisioning for possibilities, which corresponds to the missing "exploratory" function of futuring in urban design from the literature review. Each phase of urban futuring (urban foresight or urban strategic vision) can and usually do produce an input to feed into the process of urban design in the present by assessing the future. It is therefore important that a new space for exploration will be able to perform the same function in order to be integrated in the urban design process.

Thus, it is revealed that positioning of the method exists in the realm of exploring alternative possibilities to be enhanced by futures-driven design. At the same time, it gives an opportunity to explore if and how it can feed an urban design process which usually responds to the current needs or predicted opportunities.

2. Mapping futures-driven design characteristics

One of the main approaches to explore possibilities in design futures is constructing scenarios. Overall, there are three types of scenarios - policy-orienting, supporting decision-making; solution assessing, relating to specific design proposals, and design orienting, providing a framework for exploring a range of alternative possibilities (Manzini & Jegou, 2000). Design orienting type is most relevant to employ in urban

foresight for exploring possibilities. Scenarios is one of the tools that help to generate a variety of alternative futures and ideas. There are different ways of constructing scenarios, such as 2x2 matrix (Schwartz and Ogilvy, 2004), 3 Horizons (Curry and Hodgson, 2008), What-if scenarios (Dunne and Raby, 2014) and others. The main goal of scenarios is to trigger critical conversations about possible futures. They might describe situations which are "realistic enough to make us question our own lifestyles, but still sufficiently open-ended for us to adapt them to our own lives" (Jégou and Manzini, 2008). At the same time they are able to evoke empathy with the future (e.g What would it feel like to live in the future world in 2050?). This way, the future becomes a more tangible place and allows people to share ideas (Engholm, 2023). After the positionality of urban foresight for exploration of alternative possibilities was identified, it is necessary to outline the main functions of exploratory scenarios from a futures-driven approach that could support and enhance a new approach to urban foresight (Table 1).

Identified characteristics of futures-driven approach, and scenarios in particular, can empower urban foresight's role in the identified 'space for exploration' of looking for possibilities. However, while futures-driven design approaches have the immense power to open up imagination and immerse into alternative scenarios, how can it be at the same time strategically oriented and applicable in the urban design process?

3. Mapping urban design process

In order to understand how a futures-driven approach can enhance designing urban places, it is important first to delineate the process of urban design into phases. There is no single framework for the urban design process, however the main phases can be summarised as follows (Figure 4) .

Outlining urban design process is useful for further to understand which phases of the design process could be empowered with particular functions of the futures-driven approach.

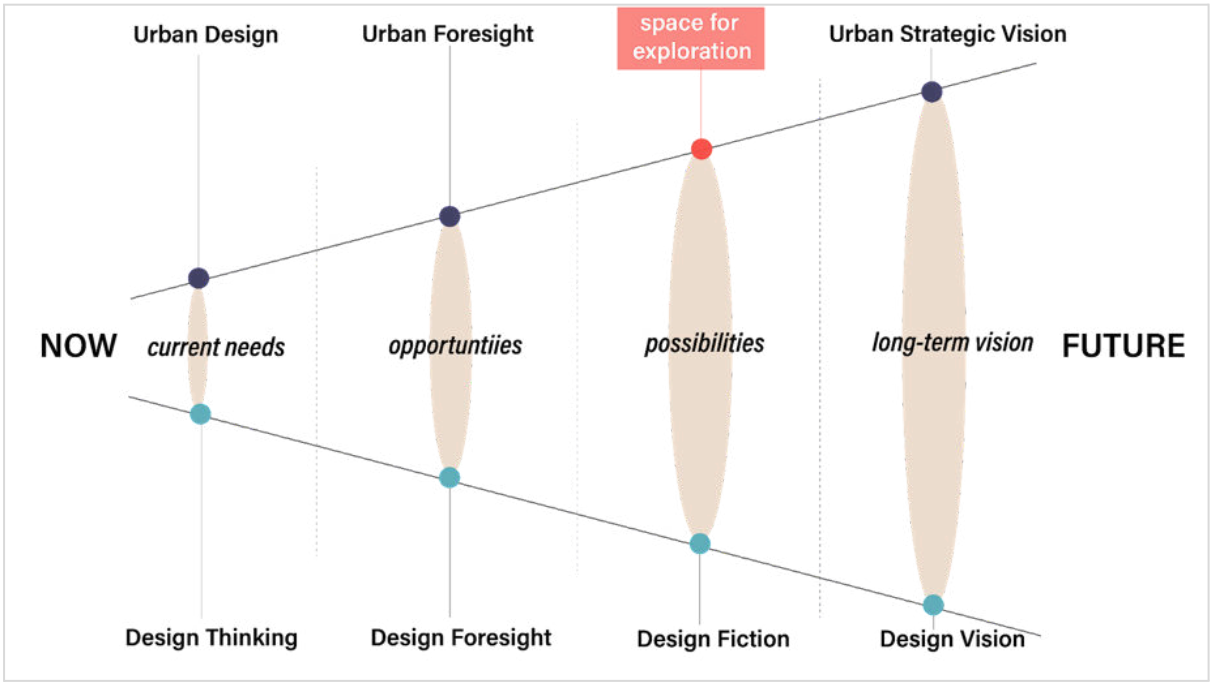


Figure 3. Positioning of the futures approaches in urban design. Source: Authors, 2023 (adapted from Buehring, 2022).

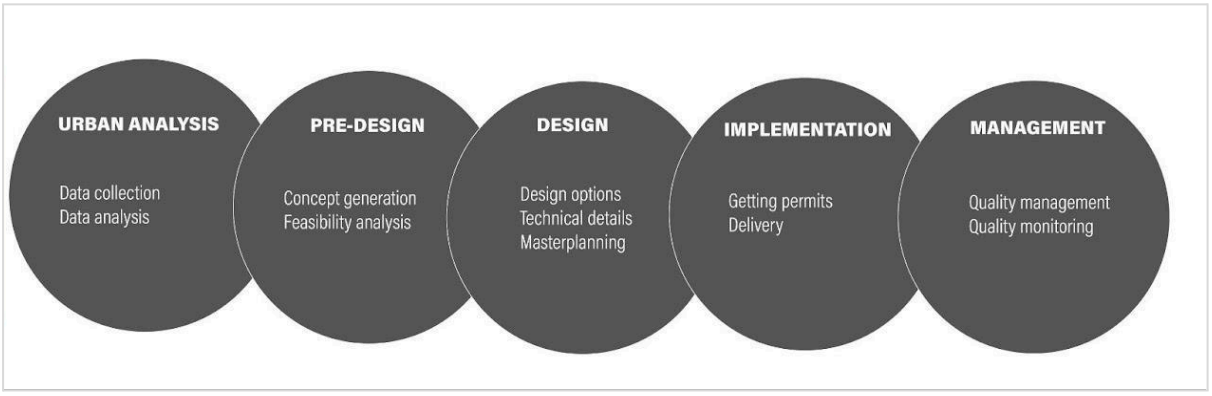


Figure 4. Urban design process framework (Source: Abd Elrahman and Asaad, 2019; Black and Eddin, 2019)

Table 1. Functions of design orienting scenarios. Source: Authors, 2023

Function of futures-driven design scenarios	Selected authors
Immersing/ stimulating magination	Hines and Zindato (2016), Pineda-Pinto et al. (2022), Childs (2020), Manzini & Jegou (2000), Shwarz (1991), Dunne and Raby (2014)
Visualisation/ “Tangibility” of the futures	Hines and Zindato (2016), Løgager et al (2021), Rasmussen (2005), Maerholz (2008)
Building common vision	Hines and Zindato (2016), Raudsepp-Hearne et al. (2020), Voros (2001)
Understanding potential pathways	Raudsepp-Hearne et al. (2020), Mansur et al. (2022), Voros (2001)

4. Outlining the method

This research quests for developing an approach to envision and inform the design of urban spaces to enhance spatial equity through a futures-driven approach. By outlining the positionality of urban design on the futures timeline from the previous steps, a missing spot has been identified in strategically applying futures methods in urban processes to explore (alternative) possibilities. Feeding from the phases of the Foresight framework, three main phases have been identified to complement different stages of the urban design process (Figure 5), which are described in the next section.

5. Creating tools for the phases of the method

Phase 1: Framing

The goal is to collect information about the context that will be used in further phases of the method and urban design process. Framing is important to embed in the spatial context of the futuring activity. It also correlates with the analysis and data collection phases of the urban design process. Framing phase is supported by two activities: (i) mapping space - to receive contextual information about urban space; and (ii) mapping behaviour - to receive how the space is used. Both activities are performed with the goal to collect information in order to reflect on it in further stages.

Phase 2: Envisioning

As discussed previously, scenarios are used as a tool to help to generate a variety of alternative futures and possibilities. Thus, the goal of this phase is to create alternative scenarios which are relevant to a particular urban space and generate ideas for the design of the space. To ensure participatory approach to design with citizens, the format of participatory futures workshops to create and explore scenarios (Ollenburg, 2019; Ramos et al., 2019). Based on the literature review and identified components to support inclusive urban futures, the following main components of the approach have been identified to include in the scenarios: (i) context, (ii) persona, (iii) design elements. To support identified scenario elements, three sets of cards were designed to engage participants in creating scenarios and generating ideas: cards with (1) What-If questions; (2) Persona; (3) Urban Design Elements (Table 2).

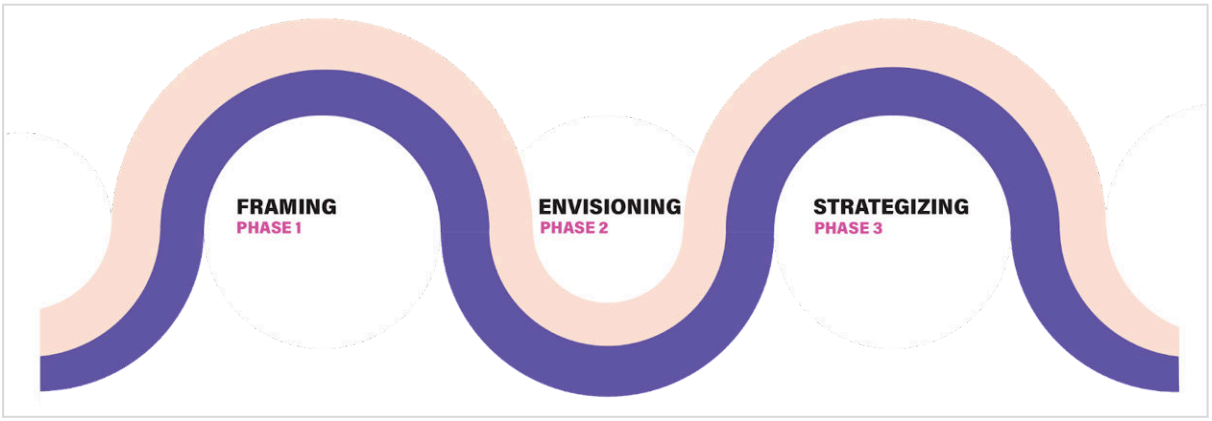


Figure 5. Three phases of the proposed method (Source: Authors, 2023).

Table 2. Source: Author, 2023.

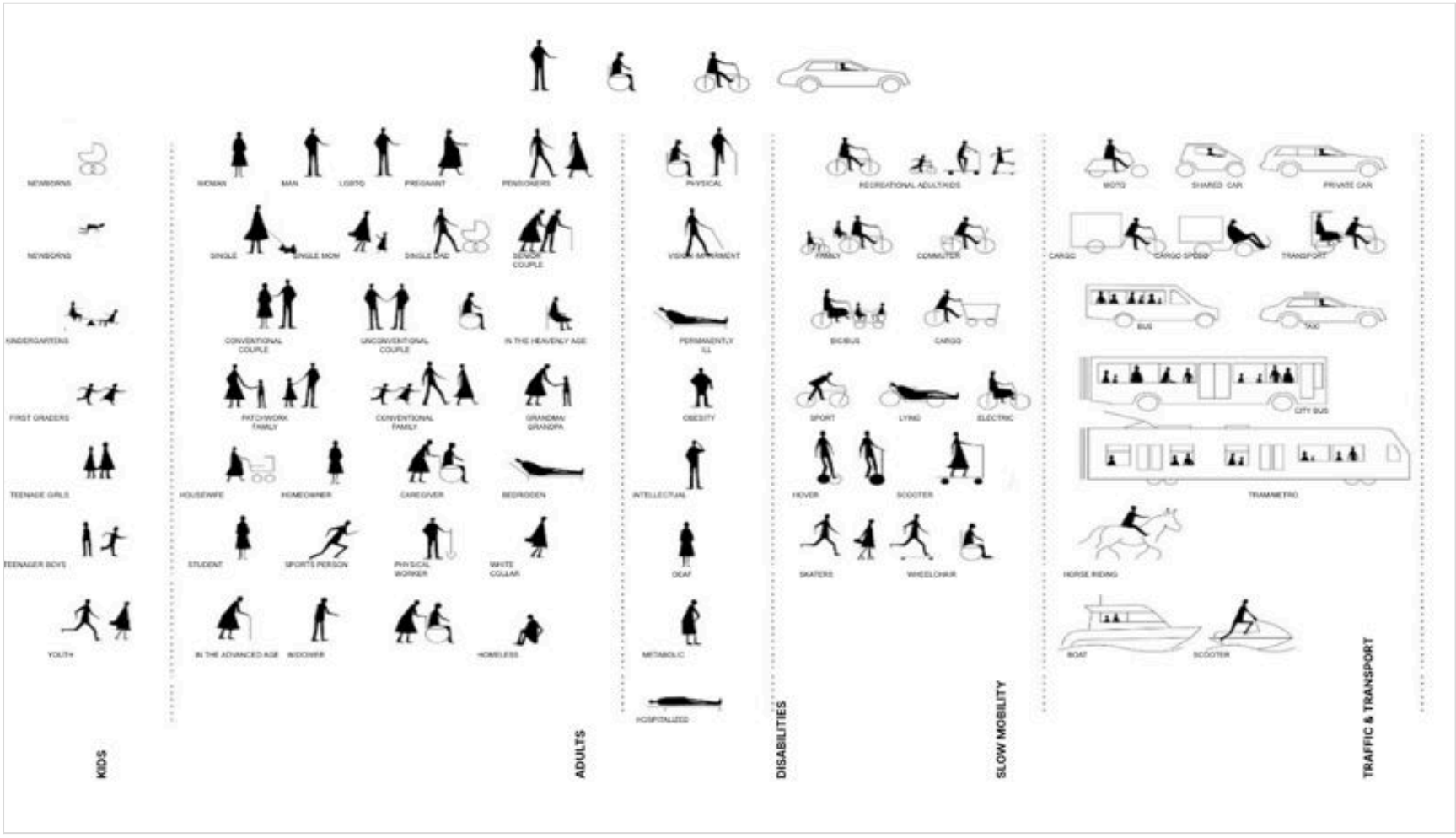
Element of the scenario	Objective	Discipline	Function of the scenario
Context	what alternative context we are designing in	Future Studies	Immersing
Persona	what type of agent we are designing for	Design	Immersing
Design elements	what elements we are designing	Urban Design	Visualisation Building common vision

What-if Questions card

What-if questions are used in design practice to imagine and create different scenarios of the future. They help to create possible futures to provoke and inspire ideas (Dunne and Raby, 2013). The overall goal of the “what-if” cards is to set up the scenario context to help participants to imagine how the urban space would look in a particular situation (e.g What if a 9-year old kid was a mayor of the city?). The questions are open and stimulate participants to give ideas in a free format (text, drawing, sketch on the map). To align with the objective of the research, what-if questions have been constructed in order to enhance spatial equity in the urban design process. Each what-if question relates to a particular human or non-human persona to emphasise their agency and foster equity in the urban environment.

Persona card

In design practice, personas are used to (i) represent a stakeholder involved in the project, or (ii) communicate the needs of different stakeholders, who would otherwise be excluded from the design process (Siddall et al., 2011). Personas are simplified images of the stakeholder, and it is free what information to include in its description, however it should be based on scientific literature, user interviews or surveys. Urban context involves a great variety of stakeholders, who might be excluded from the design process, in this way representing personas can “provide a way to map this diversity, while, at the same time, performing a certain degree of simplification” (Concilio et al., 2021). The goal of persona cards is to help participants to imagine the persona to which the What-if scenario refers (e.g. child, animal). The card describes the characteristics (I am), needs (I need), and preferences of the persona (I like/ I don’t like). Developing personas was based on academic literature, grey reports, and interviews. The mapping of a variety of human and non-human personas were done before designing cards for them (Figure 6).


NEWBORNS
NEWBORNS
KINDERGARTENS
FIRST GRADERS
TEENAGE GIRLS
TEENAGER BOYS
YOUTH
KIDS
WOMAN
MAN
LGBTQ
PREGNANT
PENSIONERS
SINGLE
SINGLE MOM
SINGLE DAD
SENIOR COUPLE
CONVENTIONAL COUPLE
UNCONVENTIONAL COUPLE
IN THE HEAVENLY AGE
PATCHWORK FAMILY
CONVENTIONAL FAMILY
GRANDMA/ GRANDPA
HOUSEWIFE
HOMEOWNER
CAREGIVER
BEDRIDDEN
STUDENT
SPORTS PERSON
PHYSICAL WORKER
WHITE COLLAR
IN THE ADVANCED AGE
WIDOWER
HOMELESS
ADULTS
PHYSICAL
VISUAL IMPAIRMENT
PERMANENTLY ILL
OBESITY
INTELLECTUAL
DEAF
METABOLIC
HOSPITALIZED
DISABILITIES
RECREATIONAL ADULTKIDS
FAMILY
COMMUTER
BICBUS
CARGO
SPORT
LYING
ELECTRIC
HOVER
SCOOTER
SKATERS
WHEELCHAIR
SLOW MOBILITY
MOTO
SHARED CAR
PRIVATE CAR
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HORSE RIDING
BOAT
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TRAFFIC & TRANSPORT

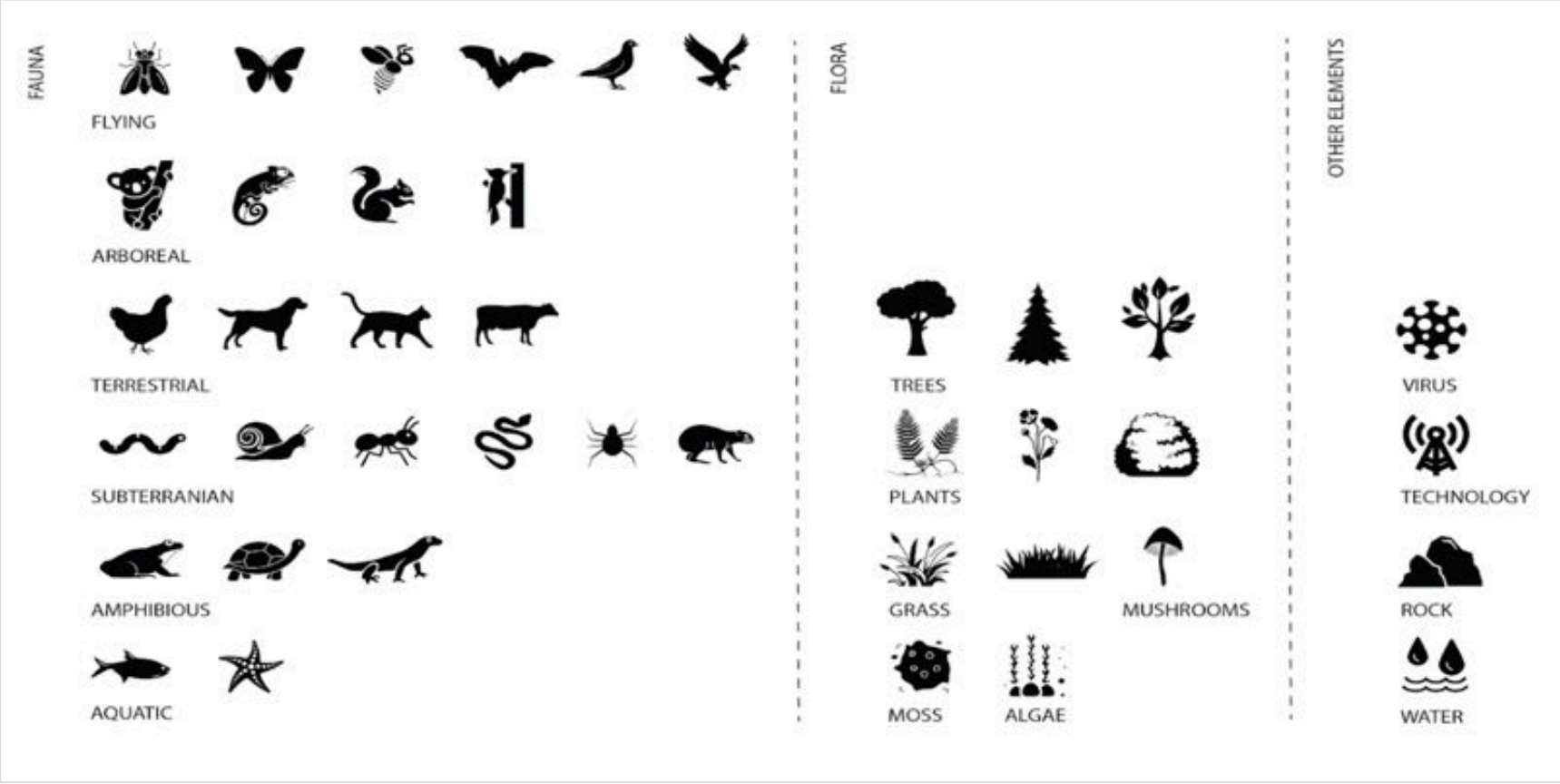

Figure 6. Mapping a variety of human and non-human stakeholders in urban spaces. Source: Authors, 2023.

Design card

In order to have a productive output of the envisioning phase, urban design cards were created to support imagining and mapping input for various elements in urban space. The goal of these cards is to help participants to imagine the physical layout of the urban space within each what-if scenario. In total, eight elements are included (Neighborhood; People; Sidewalk; Public space; Public art; Buildings; Greenery; Traffic). Urban design cards have been designed in a way to (1) indicate the main element - e.g. sidewalk and (2) more detailed questions to describe the element - e.g. shape, material, size, location, use, colours, surprising features, etc.

Map

In order to support the process of generating ideas as well as prepare for the next "strategizing" phase, there is a need of having a format which could serve as a medium between urban design and futures-driven design. Map of the urban place, which can be later developed to the masterplan by professionals, has been chosen as one of the urban foresight methods in urban design practice (McPhearson et al., 2016) to allow participants to visualise their ideas.

Flow of the process

The process of working with cards follows the sequence - 1) immersing oneself with the What-if card in an alternative scenario (What if plants had the same rights as human rights?), (2) empathising with the Persona card (characteristics, needs of plants), and (3) imagining with Urban Design cards all eight urban elements in the scenario. Map serves as the base working material throughout this process.

Field Experiment Results

Urban environment

A series of three workshops was organised in Katowice, Poland in September 2022 as a part of the Sustainable and Just Cities programme funded by ICLEI (Local Governments for Sustainability). Workshops were carried out in three neighbourhoods with 42 participants in total (Koszutka, Dabrowka Mala, Murcki neighborhoods) on different scales (neighbourhood, street, building block). The overview of the process of

development of the materials and outputs created to implement and test a new approach, as well as implemented activities is visualised in Figure 7.

Based on the input from the first two phases of the method, the output has been transferred to the urban designer to design the masterplan. The final drafts of master plans were finished in March 2023 (Figure 18), and now were handed over to a graphic design studio to produce the final designs. After they are finished, all three master plans will be installed and permanently placed in the neighbourhoods (preliminary date of installation - June 2023, funded by ICLEI as part of the grant).

It was the first time the participants in all neighbourhoods worked with the master plans, while the majority had never seen the maps of their neighbourhoods before. Throughout the workshop, all groups worked with maps by drawing, sketching and writing ideas on post-its and paper. As they possessed the local knowledge, they were able to identify very specific locations for various interventions.

Persona cards helped to acknowledge the existence and imagine the needs of different users in their urban areas. They helped to imagine the needs of different users, as one participant (a 25-year old guy) said, “I have never imagined how it is to be a pregnant woman in the city. I was quite surprised by this method and would like to think about different users more”. Several interventions for human and non-human beings have been developed and placed on the map, for instance, a walking path for hedgehogs living in the neighbourhood, hidden places for reading, using natural elements for playgrounds, etc. With the help of the persona cards, participants started to think about other human and non-human beings, which, otherwise, they would never think about or make wrong suggestions about them.

Educational environment

In October 2022, a workshop for school kids in the school of Escola Sant Marc Calldetenes, Barcelona was organized to co-design a playground. The goal was to integrate the method and adapt it to the school environment to co-design the school playground with kids. Workshop cards were substantially adapted, since the age of kids-participants was from 6 years old to 11 years old, and most of the questions would not be comprehensible and relevant for them. Literature review on designing for children's environments has been carried out in order to develop a framework for designing for kids and accordingly adapt the method (Jelić et al., 2020; ARUP, 2017; Ghaziani, 2020). New what-if questions were created based on three components: (i) Imagination; (ii) Activities; (iii) Emotions (Figure 9).

Analysis of the playground was crucial to start the collaborative design. The results of both survey and behaviour mapping which revealed stark different of space usage, was used to construct questions for the envisioning workshop to make generation and implementation of ideas more coherent and relevant to kids' experience. It was also used in the 'strategizing' phase to develop the final proposal design.

A series of activities were designed to make a participative diagnosis of the playground that would correspond to the method - survey among kids (160 answers), observations and mapping of behaviours of kids at playground by parents, and kids' mapping of their use of space.

Kids' mapping exercise (Figure 11) was extremely important as it familiarised kids with the spatial dimension of the map and they developed an understanding of it, which was an important step for the next Envisioning workshop. Presence of a teacher during the workshop was often interrupting the imagination flow of kids (e.g. phrases of teachers such as "Think about another idea, this one is impossible to implement")

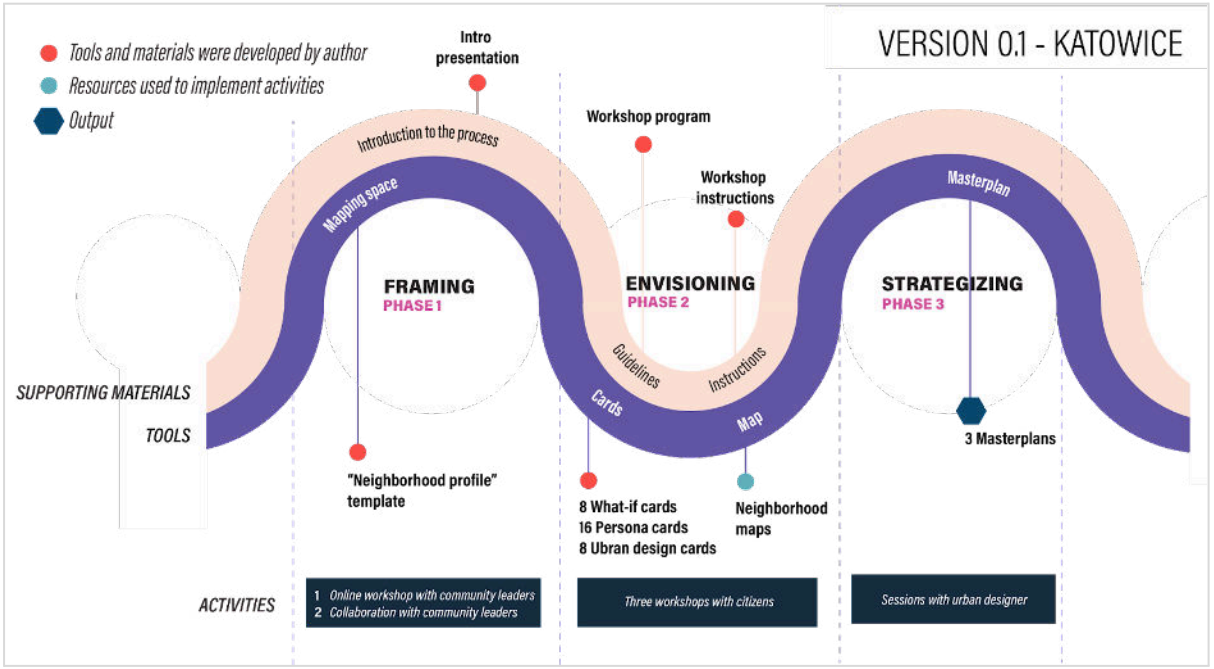

Figure 7. Framework of the process and produced outputs. Source: Authors, 2023.



Figure 8. Photos from envisioning workshops in Katowice. Source: Authors, 2022.

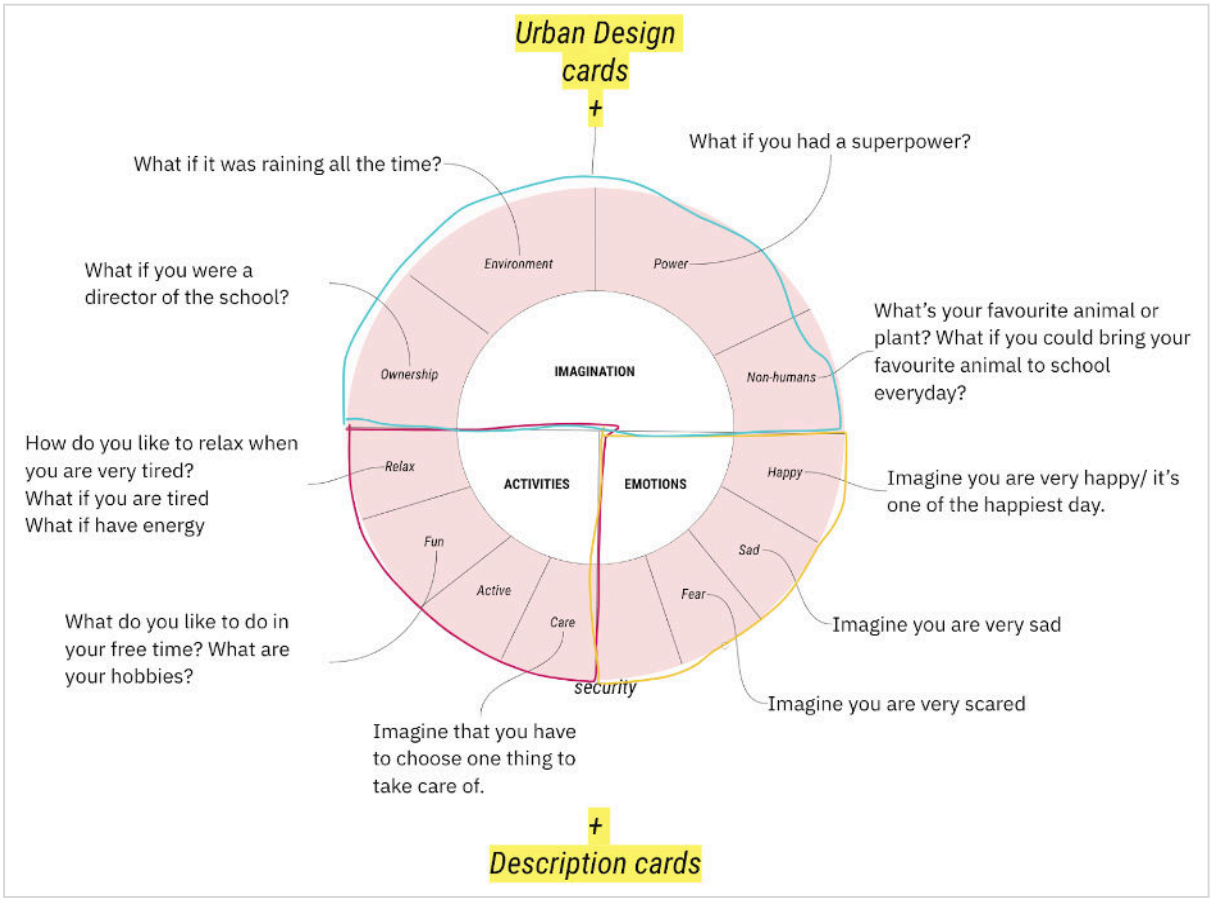

Figure 9. Framework for designing places for kids. Criteria for developing What-if questions for the workshop. Source: Authors, 2023.

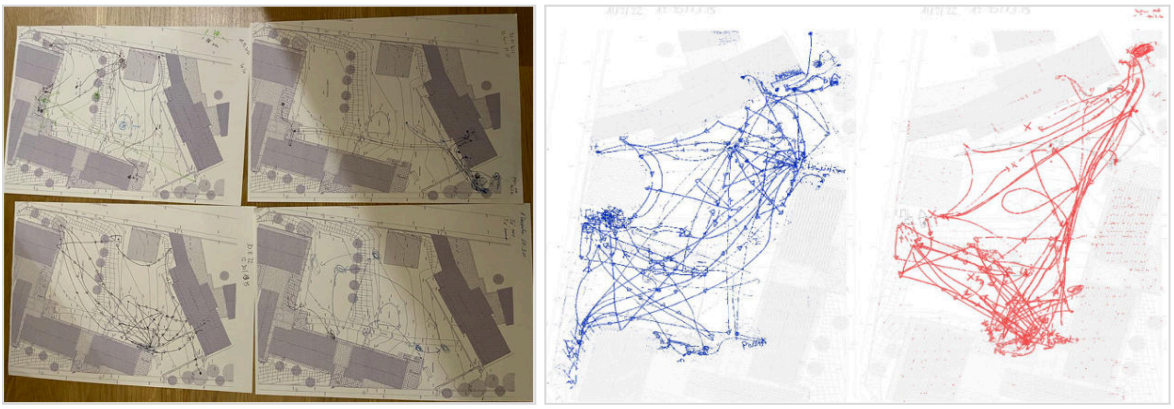

Figure 10. (on the left) Example of observation map of children's playground routes by parents. (on the right) Superimposed final maps, blue colour - boys behaviour, red - girls. Source: Authors, 2023.



Figure 11. Kids mapping with stickers the places in the playground where they played (circle - girls, triangle - boys, rectangle - no gender).

Results & Discussion

The results of the article implies (i) a new proposal to place exploratory function of urban foresight in the framework of futures studies, and (ii) a first version of the method to envision urban spaces for spatial equity.

The method

As a result of ongoing field experiments to test and iterate the method, the latest version of the method is outlined in the Figure 12.

Positionality of futures-driven generative phase in the urban design process

It was revealed that positioning of the method is the most useful in the very beginning of the process, even before the 'urban analysis' phase (Figure 13). With the help of imaginative what-if scenarios and personas, the method helps to explore and uncover information previously not explicitly discussed or known in the community (e.g. the route of hedgehogs in the neighbourhood, presence of particular ethnic groups, "secret" spots not known to outsiders, etc). This type of information is valuable to know before in order to consider it while conducting urban analysis and data collection about the place, and further develop design. This step can feed in pre-design and design phases of the urban design process.

A generative phase is proposed to be included in the beginning to envision and imagine alternative possibilities preceding the phase of normative exploration, which will also serve as an input later during the pre-design and design phases.

Translating results of the envisioning workshop into actionable output

As Rasmussen (2005) said, "scenarios can be an effective way to integrate imagination as part of the strategy formation and planning", and it was proved to be relevant for urban design. However, scenarios alone are not enough to be taken as a practical tool by designers working with urban spaces and who are not willing to act on them. Borrowing an "urban foresight tool" from urban design - a master plan - has proved to play the role of a "translator" of the futures into action. In particular, it contributed to (i) mapping formulated ideas of participants generated in what-if scenarios, (ii) serve as a common ground for collective imagination, and (iii) translating the output of the

envisioning activities into actionable output for the urban professionals in the last stage. Thus, masterplans are seen as the output of alternative what-if scenarios turned into real interventions.

Using envisioning output for planning long-term transformations

The revealed advantage of working and producing the tangible output of envisioning urban futures is that the output becomes a platform for (i) further discussion, (ii) mapping pathways to achieve the future vision. It was first revealed in practice, and then in the literature that the master planning process is highly professionalised and most of the citizens have never seen or had access to the master plans of their neighbourhoods. Working with maps, and later seeing the results reflected in the masterplans gave people the sense of agency and ownership. This way, a futures-driven design approach contributes to the democratisation of the masterplans and urban design process. More than that, having a master plan as a future vision in a material form in easy access, gives them an opportunity to continue the discussion on possible improvements and ways to achieve what has been envisioned. In this way, masterplans are seen as Transition Visions from transition design (Irwin, 2015), which are iterative in nature and allow to modify and adapt solutions based on the context. In this way, a masterplan as a future vision can also serve as a framework for evaluation of further design solutions in urban space.

Envisioning scenarios for enhancing spatial equity

The method demonstrated that the value of envisioning lies not only in developing ideas for urban design. Besides, it helps participants to acknowledge the diversity of users in the urban spaces and develop empathy for them during the workshop. Human and non-human personas are useful to support not only urban designers, but also the public to recognise the presence and imagine the needs of different users during participatory design process. Imagining personas' needs and preferences become visible and tangible when they are put on the map. In addition, it allows the inclusion of non-human stakeholders, whose needs it is difficult to know and capture. It can be an alternative to a wide-spread challenge of involving different users, especially marginalised, in participatory activities.

Benefits of using the method for designers and urban professionals

The developed method can contribute to developing futures literacy and future thinking skills not only for city developers (Toivonen et. al, 2021), but also for the citizens, as they are essential skills to achieve sustainable futures.

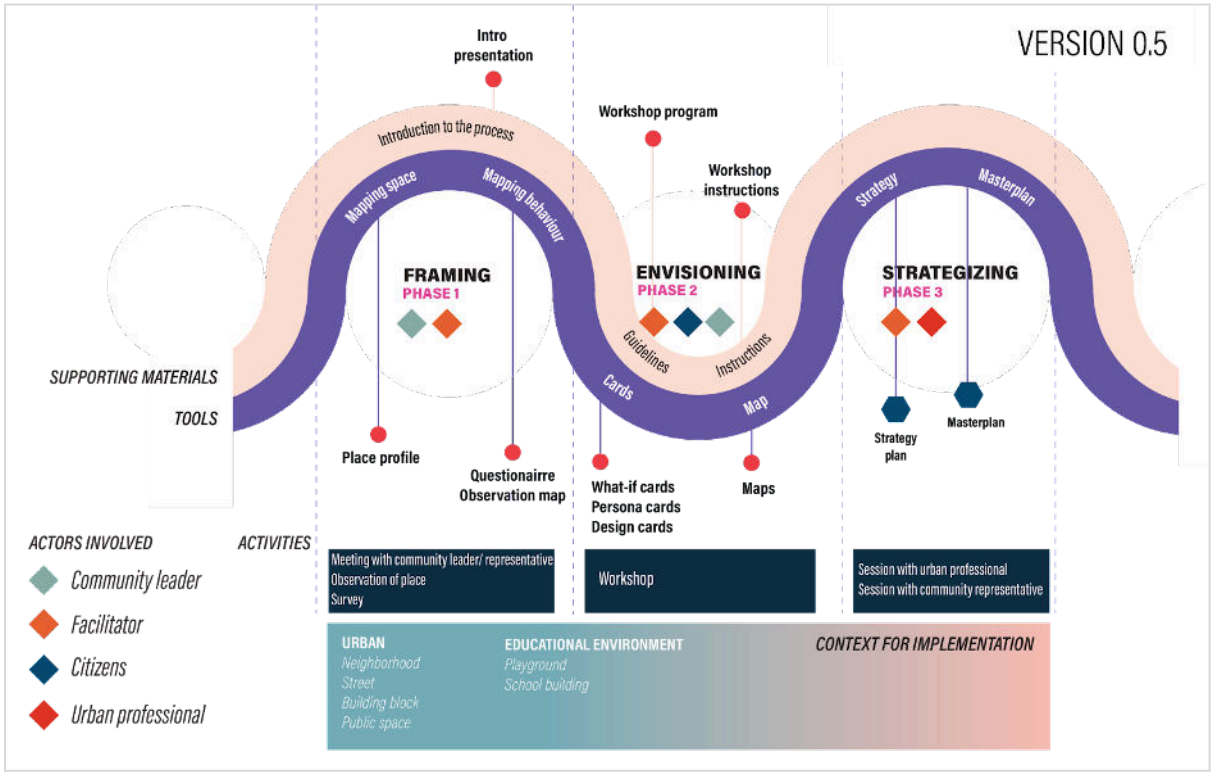

Figure 12. Latest and summarised version of the method, including phases, tools and materials, activities and types of actors involved.

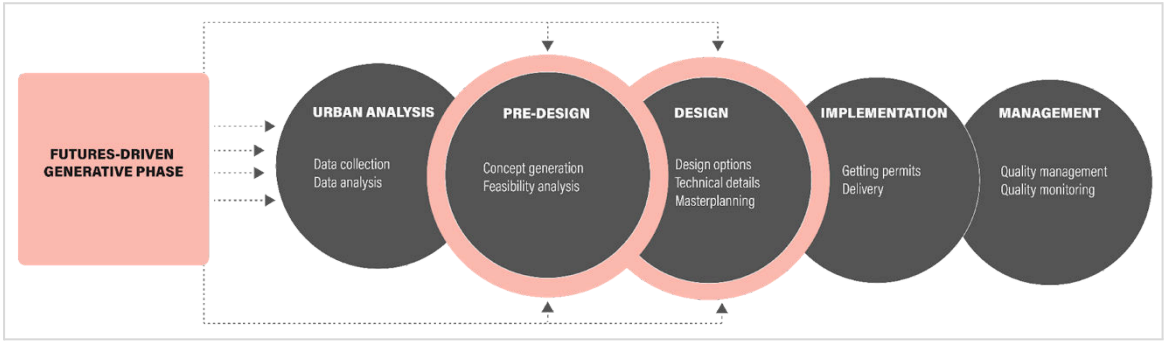

Figure 13. Proposal of positioning the method in the design of urban places.

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