PUBLIC SPACE AND PANDEMICS

THE CHANGING RELATIONSHIP BETWEEN THE PEOPLE AND THEIR CITIES

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ABSTRACT

The experience of the COVID-19 pandemic brought about fundamental changes in the relationship between people and their cities. The pandemic also unveiled design elements in public spaces that were previously not visible. This study draws on these elements to investigate some of the implications that the design in public spaces will have in relation to the well-being of the community.

The study analyses three regions shown in both historical and contemporary contexts, resulting in some of the design principles at stake. Epidemics bring specific factors into view regarding disease transmission. In the case of respiratory diseases such as COVID-19, physical space is a critical element in the way of transmission; in this context, urban design takes on a medical dimension. Taking this into account, the analysis of these case studies addresses several important points, including behaviour within the public space, density management, and current design strategies for the future of these cities.

The research identifies the need for new urban outdoor lifestyles. The principles derived from the analysis of the case studies suggest that a network of parks, small squares, and greenspaces could provide a more active and balanced lifestyle for many people than most of the current urban designs allow. Using speculative design strategies, the research develops three cartographic propositions regarding a new network of interconnected greenspaces in three example cities. These maps are intended to provoke imagination and encourage the reconsideration of the city that maintains a universal well-being.

TABLE OF CONTENTS

1.0 RATIONALE

The objective of this research is to understand the close relationship between public space, epidemics and the public's behaviour. This is possible thanks to speculative design proposals that invite to imagine and provoke future urban designs.

Just like in previous epidemics, the resolution of the COVID-19 pandemic will arguably have transcendental changes in the relationship between people and their cities. At the same time, the design of public space will be modified. Writer Diana Budds explains in CURBED magazine that "how we design and inhabit physical space, has been a primary defence against epidemics" (2020). This is the main reason why this research is relevant. Designers have used public space as a strategy to fight or stop epidemics. By analysing different approaches, which address subjects that include behaviour within public space, density management, and current strategies for future designs, it is possible to reflect upon the findings to map them and inform future designs.

The speculative design propositions primarily imagine a new order of greenspaces within the cities. The designs are informed by the meta-analysis of existing discourse, and the findings of the study cases.

2.0 CONTEXT

Epidemics and pandemics present key humanitarian challenges, as they have been major cultural shifts and pivotal points in fields such as medicine and education. The COVID-19 pandemic coexists within a very unique social context. Defined by the characteristics of the virus and the interconnection of the world, such as international trading and dependable economies.

This section attempts to explain the background of the project. It will define some key words and terms, which will give the reader a better understanding of the project. Then it will show not only the current situation, but also a history of how some cities evolved because of other pandemics. Pandemics have shown to be catalysts of change, re-imagining cities, and their infrastructures. (De Witte, 2020).

2.1 KEY DEFINITIONS

It is very important to define the difference between a pandemic and an epidemic. An epidemic is a disease that spreads over a wide area and many individuals are taken ill at the same time. Pandemics are epidemics that escalate further, which affect even wider geographical areas and a significant portion of the population. (Merriam-Webster, 2020)

PROXEMICS

The cultural anthropologist Edward T. Hall coined the term and defined it as "the interrelated observations and theories of humans use of space as a specialized elaboration of culture" (1966).

PUBLIC

When talking about public space it is important to talk about the people that use it. The public is a group of people who organize around a shared concern. (Dewey, 1927). Henceforth the public is the people as a whole that uses any space designed for the service of the community.

PUBLIC SPACE

There are many different types of public space, but for the purpose of this project it will concentrate on only two: common and official.

The official public space, is what architecture critic and historian Hans Ibelings describes as “usually a monumental square in front of an equally monumental building, used for exceptional occasions” (2020). The Zócalo at Mexico City is a good example, a square surrounded by government palaces and cathedrals, or the Tiananmen Square in Beijing, which in turn has its gate and museum. There is also common public space: parks, streets, and piazzas, that are part of everyday life and serve the public with much flexibility and openness. Designers take the same care and attention with the common public spaces as the official ones, but without too much curation or prescription (ibid.). But size and placement are not the only things that define public space. People, or the public itself, define the use of the space and what it means. So, in a way, these spaces exist because of the need of connection to others (Harraut, 2020).

The common public space — which will be the one this research will be focusing on — is the democratic place par excellence. Which, with the pandemic, has been idealised as a space for freedom (Monteys, 2020). It is a park where the public can walk, run, and encounter casual conversation, even with social distancing. Where the mind can disconnect, as the home and work space have merged into one as a result of COVID-19. It is a desired place, a picnic table where communities and friends meet carefully, bringing each their own things

and food (ibid.). Using a neighbourhood meeting as an example, that moves from their usual closed room, to the open space of a park where everyone can have their space, but they are still valuable participants in their common issues.

2.2 PUBLIC SPACE AND BEHAVIOUR

The Colombian anthropologist, Arturo Escobar, mentions how "...design is literally everywhere; from the largest structures to the humblest aspects of everyday life, modern lives are thoroughly designed lives" (2018; p. 21). This suggests that design is not only material, but also abstract, such as policy making. Public space is a highly designed environment, which strives to find a balance between social recreation and what is socially accepted behaviour.

How the residents of any city behave, is a concern to any government, and public space helps in many ways. Just as the French Philosopher Gaston Bachelard established how "there are rooms in a house that become spaces of bliss" (1958). A city also has its spaces of bliss, where you can do many activities you can't anywhere else. These public spaces are the focus of this research.

2.3 PUBLIC SPACE AND EPIDEMICS

Design of public space is closely linked to the relationship between public space and public behaviour. This is why designers change the priorities depending on the context in which they are living. This is even more important, when public health is at risk.

The exposure to diseases and new challenges to control outbreaks, have come because of the massive increase of the global urban population. Therefore, the need to research these relationships between urbanization and infectious diseases appears (Connolly, et al., 2020). During the COVID-19 pandemic, people have experimented the public space differently. On one hand, there are people with accessible public space, who were able to frequent it easily and responsibly. On the other, there were places where public space was centralized, designed for big crowds that couldn't enjoy them. Each comes from a very different urbanization plan, but ultimately had the same goal: to serve the population as a place of recreation and entertainment.

2.4 HISTORICAL BACKGROUND

It is easy to refer – maybe even remember – to past pandemics that left enduring marks in many regions, such as the Spanish flu of 1918 in United States, the AH1N1 pandemic of 2009 in Mexico, or the Ebola Virus of 2014 in West Africa (Klaus, 2020). But, there hasn't been such radical changes in urbanization like the sanitation system done by the London's Metropolitan Board of Works in response to the cholera epidemic (ibid.). Nor the fresh water system built in the 1800's as a result of epidemics, that swept New York City, (Budds, 2018). Systems which are still the ones their cities rely on.

Before the 1880 with the arrival of the germ theory of disease, the miasma theory — disapproved/outdated — changed the cities' urban planning. The belief was, that harmful nauseating *bad air* caused all diseases. So, to prevent this, designers thought that the correct flow of air and men was of the utmost importance in cities. Many cities such as London and Paris, saw renovations which included parks, sewage systems and aqueducts, to ensure clean air, clean water, and waste control. Although these renovations were based in an obsolete theory, the designs worked, as they minimized epidemics such as cholera, typhoid, and tuberculosis outbreaks by providing sanitation to otherwise unsanitary industrialized cities.

2.5 CURRENT SITUATION

To do the research, it is imperative to understand modern cities and their challenges. The head of architecture at MIT de Monchaux reflects on modern

cities design, stating that “for all their faults, cities are the infrastructure of equality" (2020). In this world of inequities, public space should be a place for anyone, accessible and equal.

The life experienced right now is very different from a few months ago. Activities in a spacious outdoors have become paramount on the daily basis, they have become a way of coping with the new set of rules that have emerged as a result of the pandemic. Crowds are scattered and social distancing is encouraged.

Albeit not a pandemic, 9/11 is an example of a recent event that changed drastically norms and regulations. Airport spaces were redesigned and security has never been tighter, and controlled. Senior Advisor to the Unites Nations, Richard Sennett explained how “regulations governing public gatherings, controlling access to buildings, and specifying how bomb-proof buildings should be constructed remained on the statute books” (2020).

Inferring that the COVID-19 pandemic, will have the same effect as 9/11. The new rules and regulations that currently govern public space, dictating social distancing and the dispersal of crowds, will persist even after having the medical means to suppress the disease (ibid.). These regulations have already made different designers think and theorize how the world could look like in the aftermath.

When a pandemic emerges, there is usually no cure nor vaccine to protect the public from. Writers and investigators Manaugh and Twilley remind us that in this case the most effective solutions become physical and spatial, such as quarantine, social distancing, and isolation, almost making urban design medical (as cited in Budds, 2020). Actions such as social distancing, isolation and quarantine have been taken around the world, to combat the SARS-COV-2 virus contagion. The actions have left a mark, social designer and design researcher Shay Raviv called them a “surreal décor of our new reality — empty streets and duct-taped stores — will forever be the iconic image of these times. In times of social distancing, we are presented with the challenge of adapting public spaces to keep distance from one another” (2020).

By mid-pandemic, these measures took place by signage in the form of stickers and yellow tape, serving only as a reminder of the policy more than an actual design solution. As the pandemic progresses, other types of more permanent solutions emerged, such as plexiglass walls or barriers, and service providers wearing masks or face shields.

3.0 METHODOLOGY

This section explains the logic of the research. Taking a qualitative research tradition starting point, and with a critical design point of view that challenges the status quo, thinking deeply about possible future consequences of present choices. It will also explain how a meta-analysis of existing and prospective design within a series of case studies will allow to identify findings which in turn could be mapped out as a speculative design outcome to become a reflective point for future designers.

3.1 META-ANALYSIS

Parks as part of common public space, are regulated spaces. But they are not as guarded as official public spaces, such as squares or museums. So, to regulate common public space, designers and urban planners usually make use of strategic resources. One of these strategies is defensive architecture, that ensures accepted social behaviour. This strategy is a type of affirmative design, as it reinforces the status quo. In contrast, they are other strategies that can encourage other types of behaviour such as physical fitness or promotion of mental health.

The analysis of existing and prospective design within three case studies of sample cities, and the benefits of a critical design point of view, will allow to identify new design principles. Therefore, a meta-analysis approach to the project is required in order to accomplish the cartographic design outcome that can serve as reflection points and information conveyors.

3.2 CASE STUDIES

I'll be using case studies as a kind of qualitative research which is an interpretative process of investigation based in different methodologic traditions (Vasilachis de Gialdino, 2006, p. 2).

The case studies represent three sample cities that, at the time of the research, produced reliable and interesting data related to the ongoing COVID-19 pandemic. The sample cities have also experienced other epidemics in the past that led to a transformation of their urban planning in very particular ways.

3.3 CRITICAL DESIGN

Popularized by Professors Dunne and Raby, critical design provides a "critique of the prevailing situation"(2001) as it "uses speculative design proposals to challenge narrow assumptions, preconceptions and givens about the role products play in everyday life" (n.d.).

3.4 SPECULATIVE DESIGN

As a branch of critical design, speculative design is a way to use design as a means of theorizing how things could be. (Dunne and Raby, 2013).

There is palpable uncertainty of how the COVID-19 pandemic is going to affect the public space. With uncertainty, fear of uncontrol and need for mitigation emerge. Yet, in *Uncertainty & Possibility: New Approaches to Future Making in Design Anthropology* Akama, Pink and Sumartojo argue that working with uncertainty is only an approach to a problem space. Creatives have uncertainty embedded in their practice "working with the possible, the imaginative and the speculative, take an important step away from the imperative to certainty that characterize some design research and practice" (2018, p.36).

Uncertainty develops space for creation. Places in crisis with the COVID-19 pandemic, have an opening to remake them. To not just survive the crisis, but create opportunities for the future. (de Monchaux, 2020) "The idea that safe,

generous and accessible common space is fundamental to public life is an essential American idea" (ibid.).

This research aims to be a reflection point that could inform future urban design. It uses maps as a speculative design outcome, that invite reflection, provoke imagination and reconsideration of the current urban landscape.

4.0 ANALYSIS

4.1 THE 3 CASE STUDIES

This document explores three case studies of three different sample regions across four cities, which have experienced very different situations not only in the current COVID-19 pandemic, but in others too. The different experience on past pandemics transformed their public space, just as the current one is doing it too. It'll attempt to construct a complete image by presenting different points of view and perspectives.

This is the base work for the research and analysis, as it will help find some clues on how they dealt with past pandemics and how that work influenced the outcome of the current pandemic. Also, it might be able to identify the cities' prospective work and emerging opportunities, while they are storming out COVID-19 pandemic.

4.1.1 SPAIN

HISTORIC (BARCELONA)

The capital city of the Catalonia region is a city recognized by its buildings from architects like Gaudí and Meier, as well as its urban planners. It is also a very dense city. Most of the apartments according to consultancy firm Afi, are between 73 and 115 meters squared with the median family consist of three to five people. (as cited in Faus Onbargi, 2020) Its famous Gothic Quarter is the historic centre of the old city or Ciutat Vella (*fig. 1*), which has some buildings dating since medieval times, made up of a labyrinth of small streets which will open into small squares. In contrast, the Eixample (*fig. 2*), built in the late 19th and early 20th century, has a strict grid pattern with inner parks and square blocks with chamfered corners, accommodating better ventilation in accordance with the miasma theory believed and followed by the time. (Ajuntament de Barcelona, n.d.)

Fig. 1 Satellite Image of Ciutat Vella (Google, n.d.)

But more important than its urban landscape is the behaviour of its residents. For Barcelonians the solidarity through family networks is very important. People tend to be very close to their friends and families, where bonds with elders are strong. The residents of Barcelona have a highly embedded outdoor urban life, so they usually disregard measures like confinement and quarantine, as it goes against what Faus Onbargi calls "the Mediterranean way" (2020). All of these combined result in cramped homes, which in turn are usually the place where people only sleep, this is why "life is outside, and Barcelona has long fostered an environment to pursue '*la vida de carrer*', or street-based lifestyle." (Faus Onbargi,

Fig. 2 An aerial view of the District of l'Eixample (Upmanis, 2019)

2020) The public space becomes important as it is where the people encounter social life. Visiting cafés and bars that take as much as the street as possible is an activity that people strive to do any given day. Barcelona has also access to the beach and the mountains, and organizes many cultural events outside, surrounded by historic buildings and parks. Crowds and large conglomerations of people that take entire streets or parks are very common. These features make Barcelona one of the most attractive cities for tourists, that will almost double the city's population exponentiating the density in an already crowded city. (UNWTO, 2019).

CONTEMPORARY (VALENCIA)

Valencia is not only an autonomous community, but also a city. Like Barcelona, it shares access to the Mediterranean Sea, it also has an old quarter called Barrio del Carmen, with some buildings dating to the Roman times. But its biggest difference is that Valencia (*fig. 3*) is one of the "cities with an existing decentralized network of small green spaces." (Honey-Rosés, et al., 2020).

During the COVID-19 pandemic, in cities with stay-at-home orders, it was observed a larger use of green spaces, especially the small neighbourhood parks. (van der Berg, 2020). It also helped people to abide by these new rules, which is consistent with the data where Valencia slowed and mostly stopped contagion, almost two weeks before other regions in Spain, like the neighbouring Catalonia and Castile La Mancha (*fig. 4*), even with the latter having half the population and at least thrice as much territory (Ministry of Health, 2020).

https://duckduckgo.com/?t=ffab&q=Valencia%2C+Spain&ia=web&iaxm=maps&strict_bbox=0&bbox=49.29667477360065%2C-123.1386%2C49.15282523643014%2C-122.798712&metatoken=0

Fig. 3 Map of Valencia (Apple, n.d.)

Smaller green places seem to be undergoing a renaissance as "the pandemic might force us to revisit our existing green space typologies, with local neighbourhood parks, pocket parks, avenues, and informal green spaces getting greater focus as larger parks may take on a different function and use" (Honey-Rosés, et al., 2020). So, cities such as Valencia, will be better prepared to provide easily accessible opportunities for the enjoyment of nature. (ibid.)

Fortunately, the idea of decentralized smaller green spaces isn't new, as Velarde, Fry and Tveit remind us that not only do they make it is easier for people to access them, but "even visual access to nature has been shown to have important physical and mental health benefits" (2007).

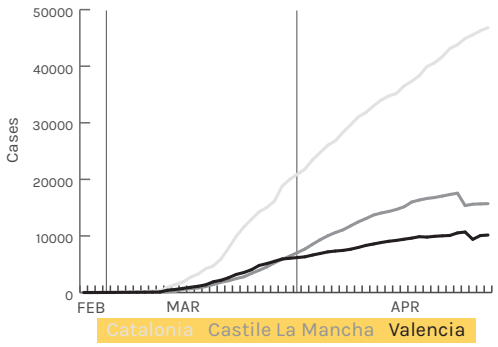

Fig. 4 COVID-19 cases in Catalonia, Valencia and Castile La Mancha

4.1.2 NEW YORK

HISTORIC

New York City could be thought as the city that has been shaped to what it is to known today thanks to epidemics like cholera, measles, small pox, scarlet fever and tuberculosis, that swept the city in the 1800's killing almost 1 in 20 New Yorkers (Budds, 2018).

Such epidemics led to the Citizens Association publishing the "Report upon the Sanitary Condition of the City" in 1866.

Fig. 5 Comparative volumes of air as metric for sustaining human health. (Citizen's Association of New York, 1866)

It was an exhaustive survey of 29 *'Sanitary Districts'* in the city that focused on the relation between disease and the spatial morphology of the urban fabric. The study shows a comprehensive understanding of the relationship between health and urban space (Plunz and Álvarez-Dávila, 2020).

In New York, like many cities at the time, John H. Griscom believed that the free movement of air and importance of light would eventually control the epidemic outbreaks. His study, Uses and Abuses of Air, published in 1854, was among the first to propose a spatial metric for the amount of air needed per person *(fig. 5)*, to overcome the negative consequences of

Fig. 6 Parks and green space New York City map. (Schorzman, 2005)

high densities (ibid.).

Another big problem was that marginalized and poor communities, were critically hit by the epidemics. As they did not have access to public space and lacked public services and infrastructure. Many times, their homes lacked windows or ventilation, creating a heavy and sick environment, where diseases would thrive.

As a result, the freshwater system was built during this time, which the city still relies on. As well as major green spaces or parks – like the famous Central Park – and other centralized public spaces were developed *(fig. 6)* that could accommodate big crowds. Building codes were also updated, accommodating more windows and air shafts. (Budds, 2018)

CONTEMPORARY

At the beginning of March, when the first cases started to appear, Mayor de Blasio and President Trump took a similar stance, without worrying to much about the novel coronavirus, with the Mayor encouraging the public to "go on with your lives + get out the town despite Coronavirus" (de Blasio, 2020). In contrast Governor Cuomo ordered the first containment zone in Westchester County in New Rochelle. (Torres, 2020)

Around mid-April, New York State's total of 181,026 cases, were higher than Spain's (161,852 cases) and Italy's (152,271),

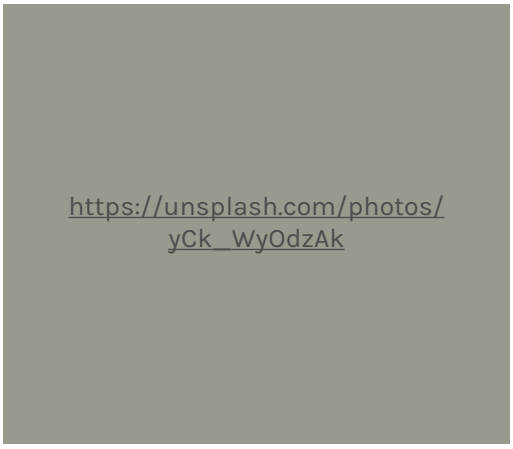

Fig. 7 Subway Message for Commuters (Lee, 2020)

countries with populations many times larger than New York. Making it the epicentre of the COVID-19 pandemic not only in the US but worldwide. New York City and its suburban counties — Nassau, Suffolk, Westchester, and Rockland — were responsible for 93% of the state wide case count (Sepkowitz, 2020).

Another outstanding statistic in comparison to other cities, is that NYC's mortality was the highest among all other US cities (NYC Health, 2020). Also, there is a big disparity in the confirmed deaths between the different race or ethnicities that live in the city. Hispanic/Latino and Black/African-American communities were the most hit. (ibid.) This suggests that just like in past pandemics, marginalized communities were the most affected. This communities usually have less access to public services and recreational spaces.

Aside of the political differences between President Trump, Mayor de Blasio, and Governor Cuomo, which inevitably left the public divided and confused, New York City's density played a major role for the rapid spread of the virus. New York is the densest city in the United States, but still pales compared with the density of some cities in Asia which preliminary data shows that weren't affected as much because of the COVID-19 pandemic, even when the virus was first detected there. But because of the space regulations such as social distance and crowd dispersing, meant that New Yorkers couldn't make use of their big green spaces, suggesting it became harder for people to comply with quarantine directions.

4.1.3 PARIS

HISTORIC

In the 19th century, five cholera pandemics hit Europe, amongst many other diseases, and Paris was one of the cities where it hit the hardest. The city's centre had not changed much since the Middle Ages. The French philosopher Victor Prosper Considerant described it in 1845 as "an immense workshop of putrefaction, where misery, pestilence and sickness work in concert, where sunlight and air rarely penetrate. Paris is a terrible place where plants shrivel and perish, and where, of seven small infants, four die during the course of the year" (as cited in de Moncan, 2002, p.10). The 1848 cholera epidemic killed almost five per cent of the inhabitants of its centre.

According to the health beliefs at the time, the city needed to let air and men circulate to prevent health epidemics, which was a major issue. So, in 1853 Napoleon III appointed the title of prefect of Seine to Georges-Eugène Haussmann. With the title, a massive urban renovation of Paris began. New boulevards, parks, and public works, encompassed what is commonly referred to Haussmann's renovation of Paris.

The renovation made the city to what it is today. Haussmann built 24 new green spaces in the neighbourhoods, and four major parks with each of the cardinal points *(fig. 8)*. But Haussmann's goal was to have one park in each of the eighty neighbourhoods of Paris, so that no one was more than ten minutes' walk from a park (Jarasse, 2007).

CONTEMPORARY

To provide better and less crowded transportation, Paris Mayor Anne Hidalgo open more than 650 kilometres of pop-

Fig. 8 Map of Paris with Haussmann's renovations in red colour. (Destugues, 2011)

up bike lanes. This strategy known as 'coronapistes', is built by closing lanes in the roadways which encompassed most of the city, even connecting both airports. Bicycles are thought to be a great tool of transportation while maintaining social distancing. (Compagnon and Corby, 2020) The lanes were deployed quickly, but will gradually update them as the Mayor called returning to the car-dominated status quo as out of the question, already making permanent changes fuelled by COVID-19 pandemic (Holland 2020). This aggressive strategy is backed up by a major overhaul of the city planning.

Before the pandemic, Mayor Hidalgo, announced that Paris was going to be a 15-minute city *(fig. 9)*. With the help of Carlos Moreno, a French Colombian researcher at the Sorbonne, they explained that *15-minute cities,* is a proposition of the reorganization of urban life based in transforming cities in a multi-centre organization, in which every inhabitant can walk or bike for 15 minutes to reach its basic places (2020). This proposal would mean a 15 minute cycle or walk to a health centre, grocery shopping, schools, parks, and work. This model encourages less use of cars, potentially creating more spaces in the city by reclaiming roads from oil-era priorities in what Moreno calls a post-vehicle era (as cited in Wakefield, 2020). It is very interesting how Paris now proposes their 15-minute city, when even Haussmann in the 19th century wanted to build a network of parks, one in each neighbourhood of Paris, so that everyone would be at a 10-minute walk to a park.

Fig. 9 Le Ville Du Quart D'Heure or city of 15 minutes. (Micaël, 2020)

But there are other cities that recognize the need of decentralization of public space and services. There is an international coalition of cities – called C40 – that believes that the only path forward, to overcome the crisis that COVID-19 has left, is for mayors to fund green stimulus plans focused on job creation. One of its recommendations in their agenda is that "all residents live in 15-minute cities" (Sisson, 2020).

4.2 PRELIMINARY SPECULATION

This section serves as a reflection and exploratory space, presents findings from the case studies, and the direction of the future work. It also reflects upon work of academics and what does that mean for this research.

In all three case studies, there is a need for a balance between outdoor public space and health. I've established that common public space is necessary to maintain a healthy urban life, and that designers shaped today's public space to promote said healthy urban life which was thought to fight epidemics such as cholera in the 1800's and obesity in the 2000's. Another recurring theme is the accessibility of public space and services.

It is possible to infer then, that designers have the responsibility to create new strategies, that take these factors into consideration. The way they will shape common public to fight pandemics such as COVID-19, – that have become more common – will shift. Prospective models that already speculated a pivotal shift of urban designing, such as the 15-minute cities will probably be the starting point for new designs in public spaces.

Another model that could work is the ReGen Village proposed by James Ehrlich, a sustainable community that practices organic farming and circular waste management. Instead of huge housing developments where living space is priority, places that not only provide a home, but also create their own energy, repurpose their waste and produce its food making *liveable* a priority. Everything integrated with Artificial Intelligence and machine learning management in a neighbourhood scale (as cited in Peters, 2020).

The ReGen Village model it's perceived as a long-term future work, as an alternative of new and more living space. But it doesn't take much consideration of what is already there. It is unimaginable a government that will demolish and rebuild everything to comply the space requirements of ReGen Villages. It is also not clear the way these villages are supposed to connect to the already established cities. Although, Ehrlich does states that it is something important in the model, as they can't be islands, apart from the rest of society.

SIX FEET UNIT

Sara Jensen Carr thinks that "six feet — the amount of space commonly suggested for social distance in order to prevent COVID-19 infection — could be the new unit we use when we think about cities and public parks" (2020). If this becomes the new unit on how to think and design common public spaces, then what would that mean to parks, which are usually an open space with design features, such as furniture and playgrounds. Thus, the *six-feet* is more than a unit of measurement, as it might become a unit of wellness, where the public can have a specific amount of air, space, and light to be healthy and safe.

Depending on the way the *six-feet unit* is used, it might have very interesting and different outcomes. This measure immediately wants to disperse the public, but it is known that space — or area itself — is the one thing that can't be change anymore. In the current world, space is highly appraised and much guarded. The solution to go vertically sounds too simplistic, it's uncertain it will be viable. There is a deeper change needed in society and its terms with space. Take NYC's Central Park, which area is 1.317 sq. mi, and for the purpose of the example, lets imagine it is just an empty grassland. There could only be around 325,000 persons in the park while social distancing. Olmsted and Vaux designed

it to serve the population of Manhattan, which is more than 1.6 million. That would be around 5% of the population.

The *six-feet unit* is also a contradictory idea, as urban planners have traditionally place emphasis in human interaction. Designers recognize the value of meeting points as sources of collaboration, inclusion, and community-building. Honey-Rosés explains how "if you look at the literature on the health benefits of green spaces, one of the primary advantages is social connectivity – people seeing their neighbours and being part of a community" (as cited in Holland, 2020). Naturally this leads to wondering, how can connectivity with social distance be achieved? Connectivity will become more valued and precious, and whoever is allowed inside the *six-feet unit* space will have to be someone very trustworthy.

'RECLAIMING' THE STREETS / NEW BROADWAY

There is also an interesting movement that might come from the fact that roadways have been closed to through-traffic. Not only Paris is taking this approach, but other cities such as Oakland, Auckland, Mexico City, New York, Bogota, Quito, and many others are experimenting with this measure to encourage cycling, thus reducing crowds on buses and subways (Holland, 2020). '*Reclaiming*' the streets from cars,

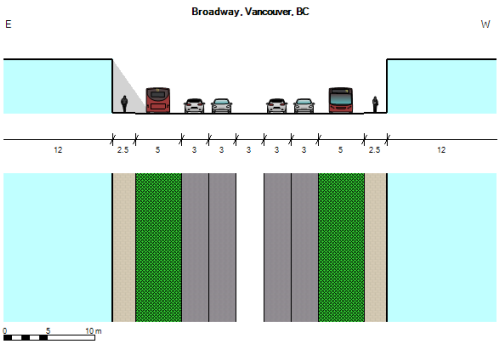

Fig. 10 Broadway distribution as it is today.

can encourage wider sidewalks and more bike lanes, which can be safer methods of transport in a social distancing world.

It is not a surprise that most North American cities after the Second Industrial Revolution were modelled or adapted a more car-centric urbanism. In the city of

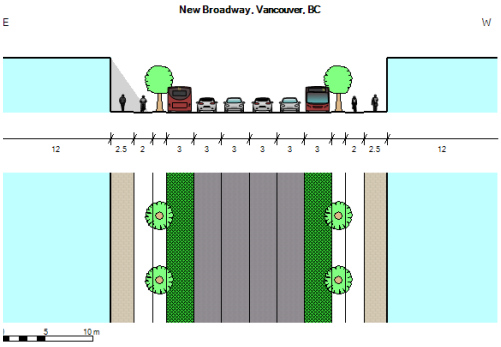

Fig. 11 Proposed Broadway distribution.

Vancouver, BC, Broadway avenue is an example for this.

Broadway as it is now *(fig. 10)*, is an avenue with exclusive bus lanes and 4 car lanes. In the centre there is another lane that serves as a left turn lane in pertinent crossings, but is removed mid block to give parking space. This means that 10% of the vehicular passage is reserved to stop traffic.

The same avenue with a less car-centric view could accommodate the same traffic

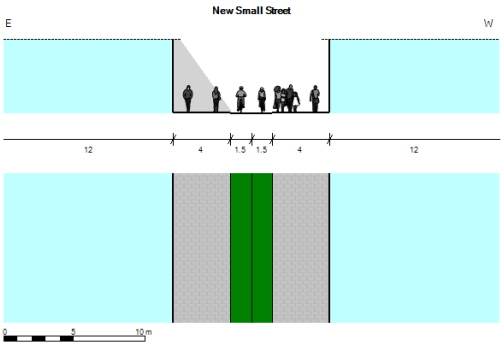

Fig. 12 Proposed small street distribution.

lanes and add space to other forms of transportation *(fig. 11)*. Cycling and walking are encouraged to minimize overcrowding in public transport.

So, just by removing the *flex space* contemplated for parking/left turn lanes, it could be possible to add dedicated bike lanes protected with median strips lined with trees.

This simple exercise easily shows how much space in roads is contemplated or reserved for possible car usage.

It is also possible to take this exploration further. Instead of thinking about a less car-centric point of view, it is possible to imagine a pedestrian-centric or cycling-centric.
The subsequent exploration *(fig. 12)* takes the width of a small residential street, which usually has little traffic, and thoroughly transforming it into a pedestrian-centric road.

In this case the sidewalks were widened to allow more space for pedestrians, dispersing crowds an important trait in a socially distancing world. Limited vehicle traffic such as local traffic or emergency/service vehicles could take up the bike lanes in case its needed.

DENSITY ≠ CROWDS / GRIDS

It is notable as well, that density does not mean a higher risk for pandemics to spread. As the case studies suggest, a poorly managed density is riskier than density itself. As referenced before, a lot of cities in Asia, like Hong Kong, Manila or Mumbai are much denser than Manhattan, New York's densest borough. But all of them were better at managing COVID-19 than the latter, inferring that the public in the Asian counterparts had better access to public space. This phenomenon can be seen also with Valencia, a much denser region than its neighbouring Castile La Mancha. Robert Steutevile reminds us that "there is no clear evidence that density, per se, is the problem. Crowding is distinct from density. Density is the number of housing units, or people living, per unit of land. Crowding is a whole lot of people gathered together in a space" (2020). This last point reinforces the difference between a city that is used to crowds, such as Barcelona, and Valencia, a city that isn't despite their similarities. This fact is important, as many people out of fear, might think that city's density is the problem in need to address against pandemics.

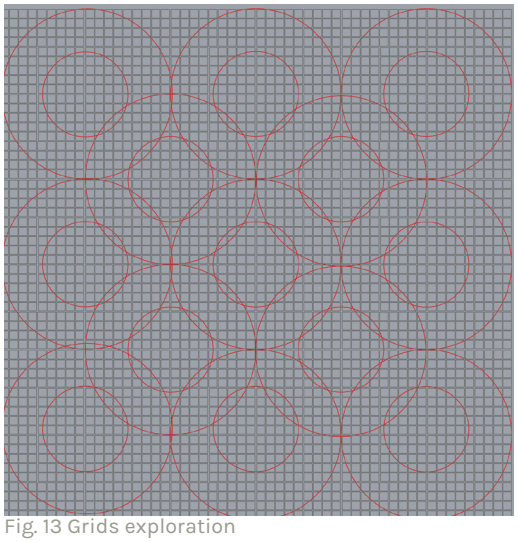
Fig. 13 Grids exploration

In an effort to avoid overcrowded areas, the idea of multi-centre cities stands out. It could also improve quality of life, and reduce traffic as it would short commutes.

To explore this idea further for this research a grid pattern *(fig. 13)* was created, representing blocks in a city. Then, as an added layer, there is a pattern of circles, representing 1.5 km radius — which is a 15-minute walk — and 3 km radius or a 15-minute bike ride.

This simple grid represents a rather large city of 324 km2 — around the size of Philadelphia —. To create a multi-centre city, in this grid that would mean at least around 13 centres that could provide with all the services needed. This exploration of course does not take density into consideration, just area.

This would mean that a city like Vancouver (114.97 km2) would only require a minimum of 4 to 5 centres. In contrast, Vancouver is divided in 23 official neighbourhoods. Which is the city's way to break up the city's geographic area for delivering services and distributing resources.

SMALL GREEN SPACES / FANTASY CITY

But all the models concur in a need of

Fig. 14 A Small Green Space within a very dense area.

Fig. 15 A crossroad depicting a New Small Street.

a network of smaller parks and green pockets being designed and constructed in neighbourhoods *(fig. 14)*, that can fit the means of the public. An abundance of green space that serve less people means less crowds and better access, instead of the major green spaces built for big crowds, with a few percentages of the public having easy access.

It is not a *new* concept, as there are many examples throughout many cities or neighbourhoods that have achieved this. As an example, residents of False Creek South neighbourhood in Vancouver, B.C. have access to many green spaces and recreational activities. (Alexander, 2000). In a way, they live in a 15-minute city, with most of the services within 15 minutes, walking or cycling.

If the concept of this neighbourhood is maximized the result could be a Fantasy City. An exploration that attempts to be a one place-discussion focus that could also showcase all the relevant subjects of the past explorations. It works as an example and a proof of concept of sorts, as it is established in a fantastic space that wants to follow real world concepts as close as possible.

It was created using the city-building simulation game *Cities: Skylines*. This allowed access to thousands of resources and mods from the player community, and it was able to depict the past explorations thoroughly and very quickly.

The Grid exploration was used to allocate services and needs. The New Broadway *(fig. 15)* explorations were the only ones used as roads of the city, giving a unique view of a utopian city with a less car-centric street approach.

One of the most interesting things about using the software, is the various map views *(fig. 16)* that generates, with information needed in order to achieve the many goals the game has. Maps can have a great deal of information within, enabling a space for reflection and imagination.

These explorations have their basis in the insights found in the case studies; they determine a possible transformation in the urban imaginary, especially in the way we design or think about greenspaces. Some of the benefits to the people and their cities specifically address access to public space and safe personal transportation, which are subjects that emerge relevant in the fight against COVID-19.

Changes in public space design always bring with it other benefits that may have not been foreseen in the original designs, which allows thinking of universal well-being.

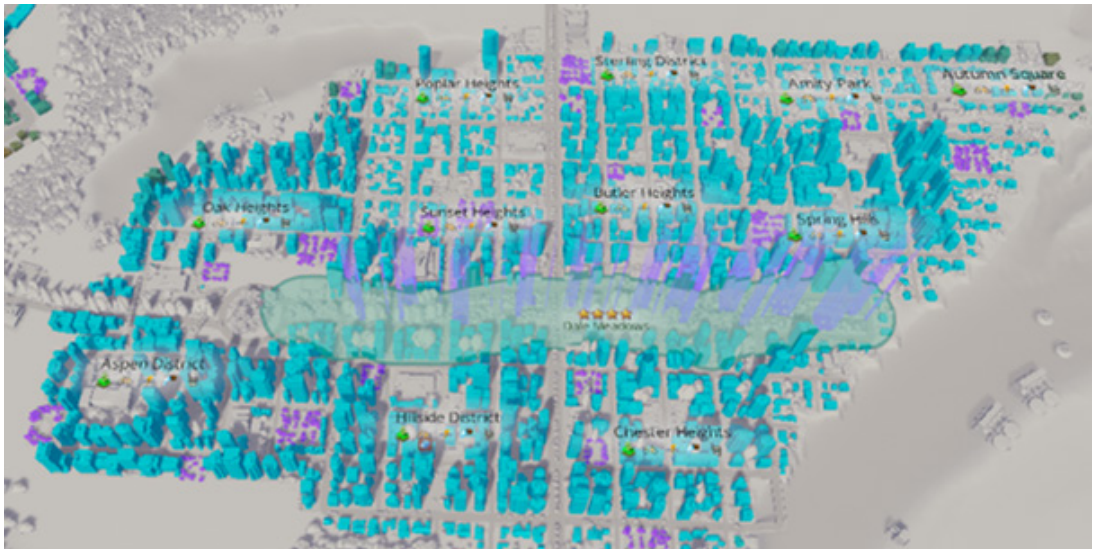

Fig. 16 The map of the Fantasy City, the purple areas show small green spaces. The encircled area is a big park. The different shades of brown to blue in buildings showed how "happy" the residents were

5.0 CONNECTING GREENSPACES

One of the main takeaways from the analysis was the need for a new urban outdoor lifestyle. A way to achieve it is by creating a network of existing and new interconnected public spaces such as parks, small squares, and greenspaces. These networks can provide a more active and balanced lifestyle.

Human-built public ways on land, are meant to connect cities and places within them. There are different variations, and they can prioritize or exclusively connect people through a single mobility idea. Highways and streets prioritize cars. Tracks and railways exclusively accommodate trains or subway systems.

After the Second Industrial revolution, these connections became commonly car-centric. Paved strips in the land that create barriers and separation, thus becoming an issue for wildlife and their habitat.

A way to minimize the side effects it has on wildlife and their habitats; people have been building wildlife crossing structures. In the most northern climates, the structures in the form of overpasses *(fig. 16)* — above highways — or underpasses are the most common. These connections between wildlife habitats have created safer highways for humans, and increased the amount of wildlife in the near habitats (Parks Canada, 2007).

E.O. Wilson wrote in The Diversity of Life about the importance of biodiversity, he then argued that the worst contributor to current species extinction is habitat destruction. (1992). A way to offset this problem is by reconnecting the wildlife habitats which will promote and increase biodiversity.

The biodiversity theory is backed up by experiments such as the island bird data

Fig. 16 Wolverine Overpass and the Trans-Canada Highway in Banff National Park, A.B. (Ford, 2014)

and Wilson's and MacArthur's theory of the island biogeography, which usually is used to explain the number of different species — or patterns of species richness — on islands (1960).

As Triantis and Matthews explain, there are two main patterns. One is that species richness increases if a greater area is sampled. The other pattern is that species richness decreases the more isolated the island is — the farther away from a potential source of species, such as the closest mainland. (2020).

Striving for symbiosis and balance in order to coexist with nature, connecting greenspaces not only achieves exchange and communication within communities of species, but also actively creates public space throughout the cities implemented.

Human settlements like cities can be thought as human habitats, built by and for themselves. Inside the cities people need to connect and travel, thus creating different transport connections usually made from pavement and concrete alienating other forms of life. The preservation of these other life forms is very important for the survival of human being, thus creating pockets within the cities referred as greenspaces.

The health benefits of greenspaces are vast, but they are also required for social connectivity. (Holland, 2020).

The greenspace connections project not only would create access for virtually any point in the city to a greenspace and other public spaces, but also an efficient and secure way for pedestrians to travel more quickly, making spaces for communities to engage and socialize.

A greenspace connection system such as these ones, thought as a lives first connectivity system, will also facilitate successful connections for the communities of wildlife and other species, which biodiversity relies on.

Just like the wildlife counterparts in Banff National Park, other types of living beings would have a larger space to satisfy their needs. The biodiversity of the urban landscape and its surrounding could grow exponentially.

Fig. 17 Future connections on The High Line (Friends of the High Line, 2021)

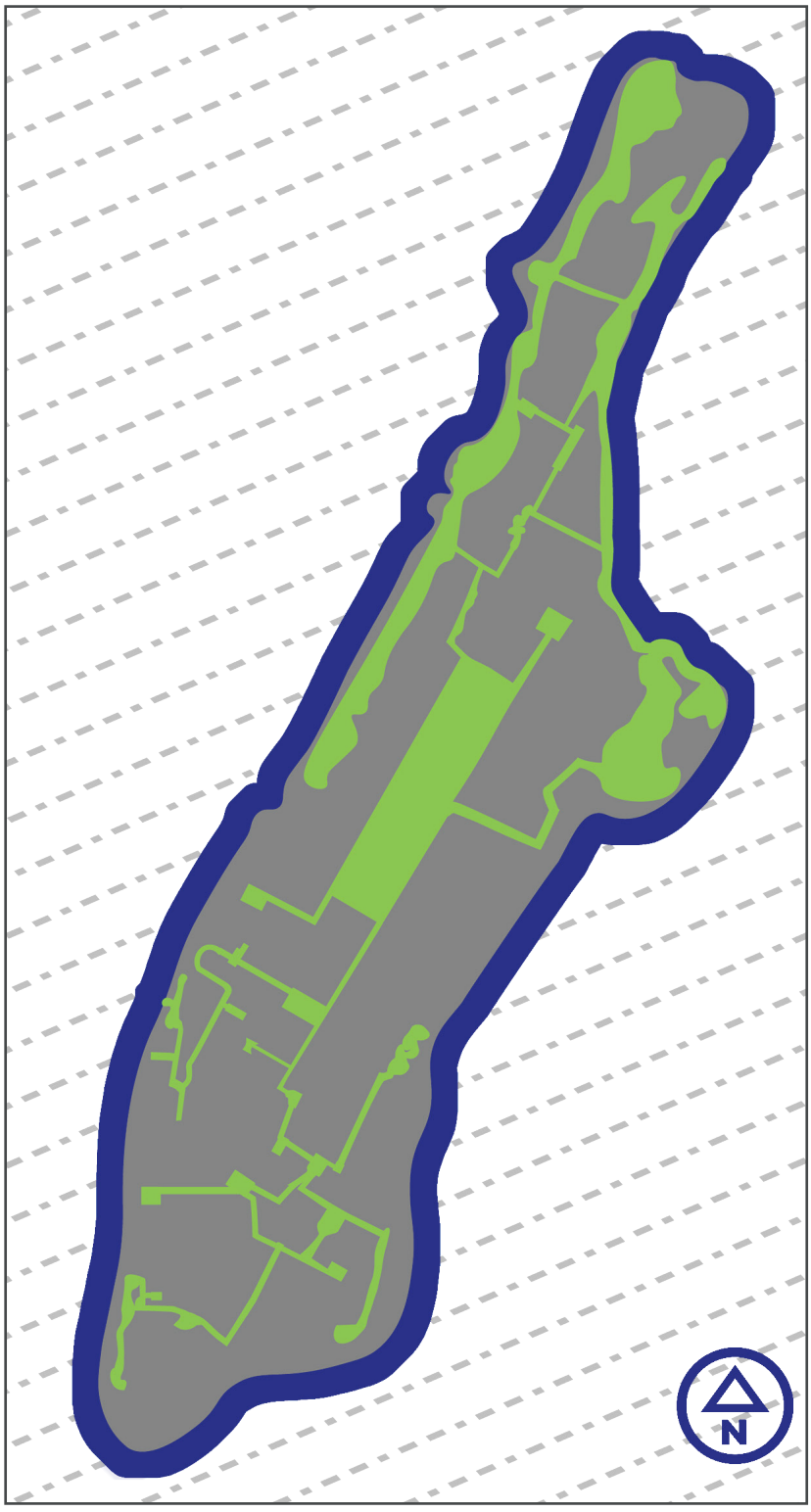

Fig. 18 Manhattan's High Line Connection System.

Fig. 19 Detailed satellite image of Midtown with the proposed connections of greenspaces.

5.1 MANHATTAN

The island of Manhattan is the densest borough of New York City, and it is famous for its tall skyscrapers and big greenspaces, most notoriously Central Park.

Another more current attraction is The High Line park, which was built on a historic elevated rail line that was deemed obsolete thanks to the larger and wildly used like highways and roads.

It created not only multiple different common public spaces, but also pedestrian connectivity within a neighbourhood that lost it because of the West Side Highway.

It is an evolving project *(fig. 17)*, that — according to the current Governor — will safely connect pedestrians to government buildings, plazas, parks and many other types of public spaces while creating new ones within (2021).

With the apparent success with these types of *greenspace connections* it is easy to imagine Manhattan with a High Line connection system that could encompass the whole island, much like their subway system. Such a proposition would take the idea of an elevated park with the vehicle traffic underneath, and expands it as a way to connect the greenspaces and people inside Manhattan *(fig. 18)*.

The connections could follow the current street path of the city, achieving a sense of transportation, also it would help its residents as they would be accustomed to the city's layout and its blocks. *(fig. 19)*.

Manhattan's High Line connection system resembles much as a roadmap. A map that not only tells you your position, but also gives the possibility to move in a system. The High Line connections are the means for the transport, as the parks themselves become what could resemble to that of subway stations or bus stops, with Central Park — or a Union Station — in its core.

Fig. 20 Mapocho River and the Telecommunications Tower, Santiago de Chile (Restrepo Acosta, 2017)

5.2 SANTIAGO

The capital and largest city of Chile has a population of around 7 million people. The city sits in the country's central valley and it is surrounded by the Andes mountains.

The city has a few stand-alone hills and it is divided by the Mapocho River *(fig. 20)* which is lined by parks such as Forestal Park, Park of the Kings and Balmaceda Park.

The current Chilean government started construction in July of yet another riverside park: Mapocho Río. It will be the largest yet and will connect the communes of Quinta Normal and Cerro Navia. The location of the park is supposedly identified as a place where crime, pollution and drug abuse are common.

It is possible to imagine the Mapocho River with nothing but its parks running alongside. Connecting the different communes of the capital city and crossing through the urban landscape. *(fig. 22)*. Becoming a great way of passage for the citizens and wildlife. From this great way, a web of connections to other inner greenspaces is possible.

Zanjón de la Aguada is the other body of water that crosses the city. This natural channel can be decunstructed from its current state and serve as another great way for greenspace connections and natural habitats.

Connecting the Andes mountains through the valley and to the urban greenspaces *(fig. 21)* would create a system for the species that don't have access because of the human settlement. It would create connections to the wilderness, to humans and other living beings that surround Santiago.

The natural riverbeds would connect the surrounding mountains and the inner greenspaces, through these natural channels it is possible to create a connection between human and its environment, promoting a new and closer relationship.

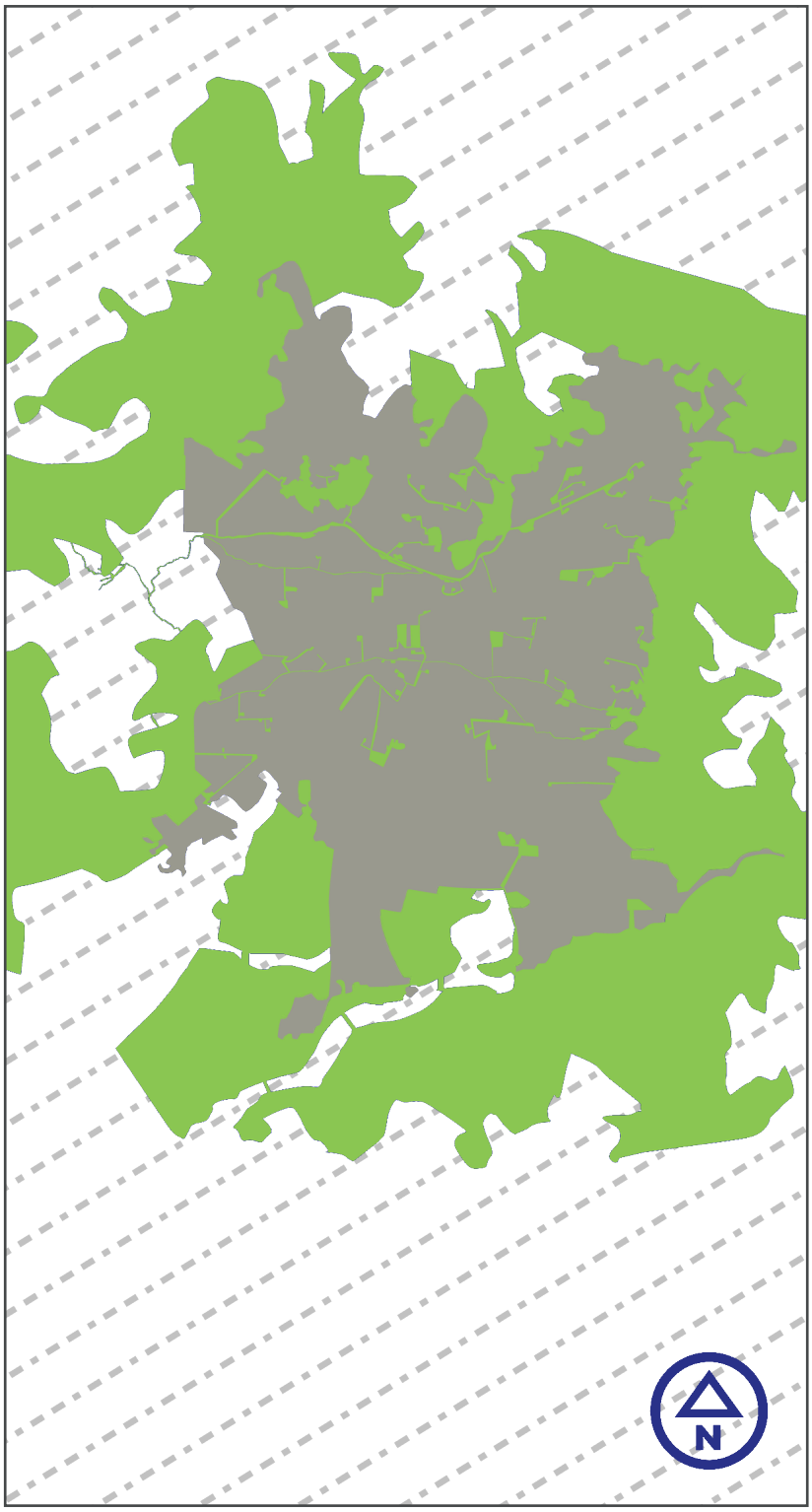

Fig. 21 Santiago's green connections system.

Fig. 22 Image of two riverside parks, Mapocho Río Park and Park of the Kings joined together by a connection alongside the river.

5.3 SEOUL

Korea's largest and capital city. It is divided by the Han River *(fig. 23)* and surrounded by eight mountains. According to the city's Metropolitan Government, Seoul has close to 40 different parks, ranging from ecological parks "designed for the preservation of rare flora and fauna in mind" (2021), and smaller human built spaces that "provide environmentally-friendly settings with diverse fun facilities." (ibid.)

Seoul is a city where its public already enjoys numerous infrastructure and greenspaces which attempt to create connections between the different human and non-human communities in the city. Making it a very interesting city to connect through its greenspaces.

Almost all riversides are — or will be, as the government plans to revamp the green path along the Hangang River — public space with walkways, parks and other recreational areas. This makes them the perfect starting point to become the passage ways that connect the greenspaces across the city.

The connections of Seoul's greenspaces *(fig. 24)* can be imagined as a mix between those in Manhattan's and Santiago. As the Korean city has — although not as many — vast mountains and wild greenspaces like the ones surrounding Santiago, and smaller human made *oasis-like* parks in the inner city.

This network is supported by the fact that the government of Seoul is currently mapping the walkways of the city and rating them for *vulnerable pedestrians*, *(fig. 25)* where they suggest the recommended paths, the ones they should only used accompanied and the ones that are not recommended.

It becomes possible to imagine a city that not only provides greenspace as a recreational or entertainment outlet, but as a means of communication and connection for its citizens and wildlife.

Fig. 23 Seonyudo Island (left) and the Han River . (Seoul Insiders Guide, 2017)

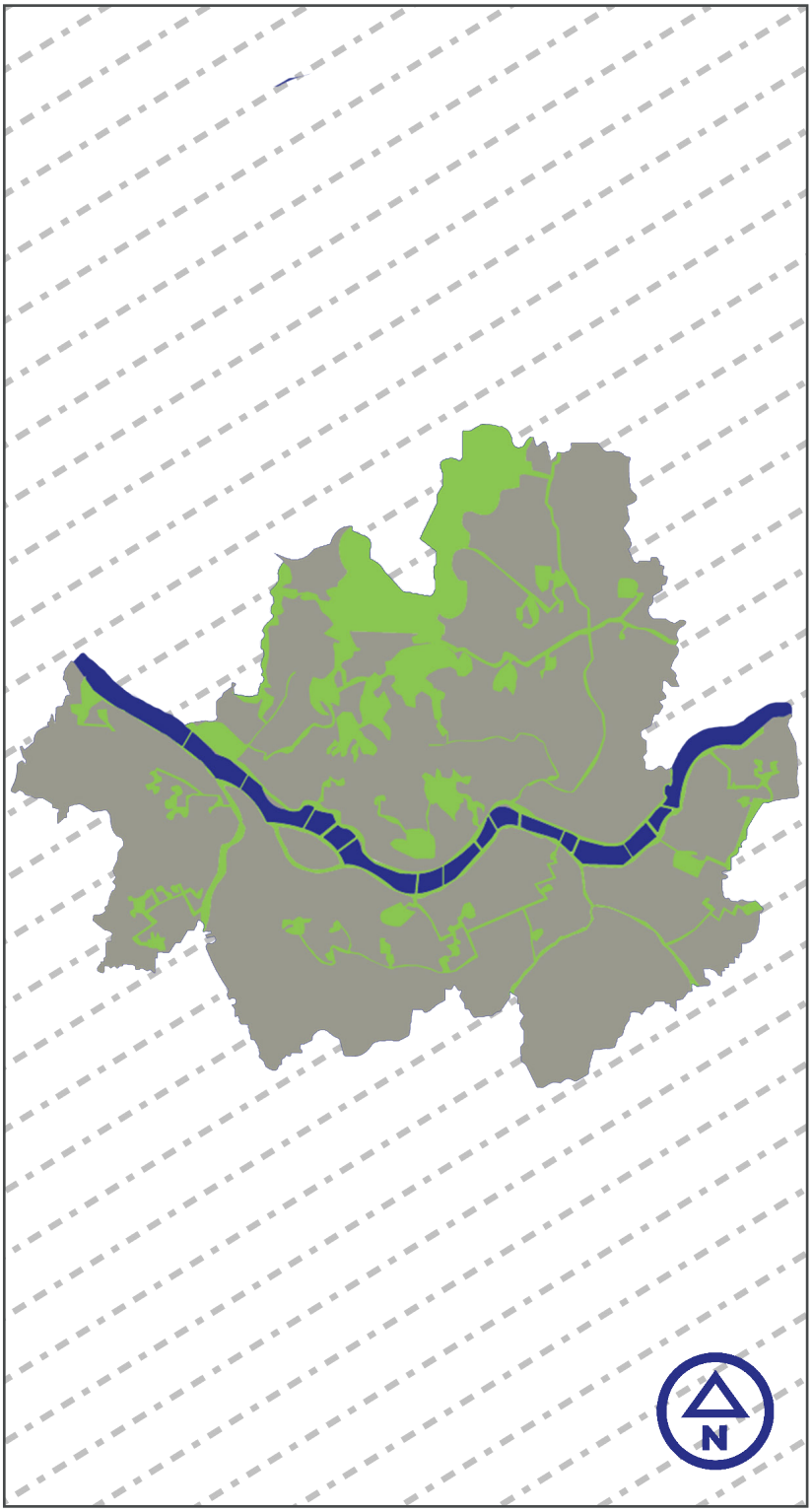

Fig. 24 Connecting greenspaces of Seoul.

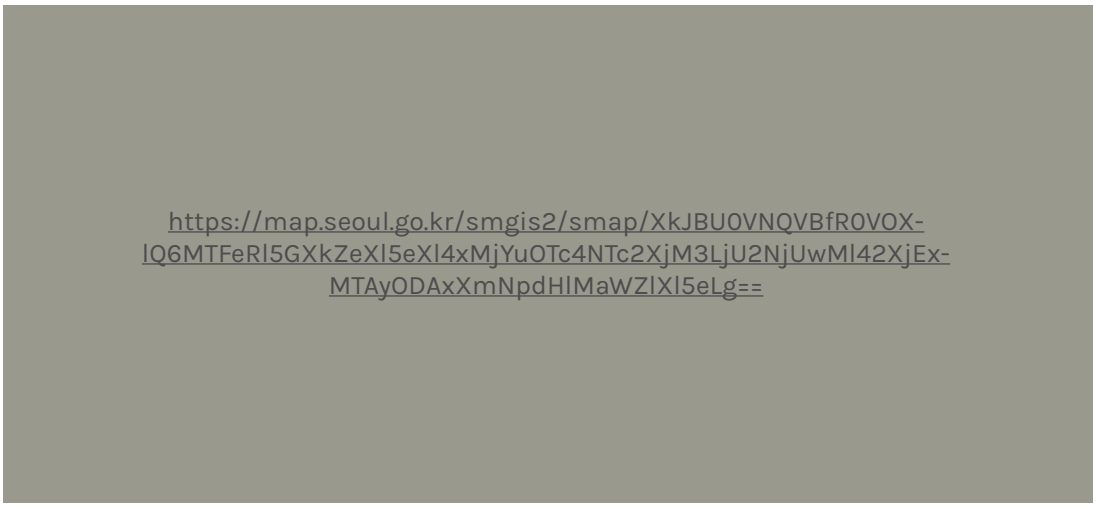

Fig. 25 Detailed view of the Map of Walking Trails for Vulnerable Pedestrians. (SMG, 2021)

6.0 FUTURE DIRECTION

Connecting greenspaces only shows a fragment of a world, and invites us to imagine the rest of it. By creating cartographic visualizations of this world, future designers and citizens of the cities can place themselves in it and imagine the world the maps belong to. This could prompt further creativity and imagination rather than telling them exactly what to do.

It is established that a network of common public space is needed in the future of our cities. A need of a network of smaller parks and green pockets being designed and constructed in neighbourhoods, that can fit the means of the public. That together can create an abundance of green space that each serve less people, meaning less crowds but all of them together creating better access for everyone. But just as equally important is the connection between the pubic spaces.

The cartographic propositions look vastly different from each other, as they somehow follow current design aspirations that their own cities have. As a result, they do not establish clearly where or how the connections could be allocated, as it is intended that the different urban and social characteristics of each city and its public will have a larger influence on this regard.

Some cities around the globe are already getting away from the current car-centric status quo. Many different projects and propositions are being developed and built, like the expected plans for the 15-minute city in Paris.

These projects are quite reasonable and expected, just by the simple fact that the space required for individual motor vehicles is way greater than that of a pedestrian or even a bicyclist. Which frees up space for the public in their cities, not only providing options in connectivity, but the possibility of a more active urban outdoor lifestyle. Other projects like a public park connecting the city of North Vancouver or the Gathering Place in Tulsa, Oklahoma, address problems like highways dividing communities. (Chan, 2021)

It is not hard then to imagine a connectivity system. A public way of land centred on living beings and the public itself, rather than the vehicle-centred ones, dominant in our settlements.

These connections should create a living being's network, that would not only fit the people themselves, but also other wildlife creating a symbiosis between the natural world and humans.

COVID-19 pandemic has brought to light issues in the design of our cities, mainly the physical space required for people to stay safe against airborne diseases. The more outdoor urban space a city has, the more space its people will have, and the healthier they can be without the need of harsh indoor quarantine.

The greenway interventions proposed present a different imaginary that elevates social connections along with connections to other forms of life. The proposition questions the current systems, encouraging a reconsideration of what a city that maintains a universal well-being could be. Imagine connections that are strong and resilient.

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THANK YOU

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