

**The Impact of Urban density and Adaptive Urban Strategies
on the usage of cities amidst the COVID-19 Pandemic**

*A városi népsűrűség és az adaptív várostervezési stratégiák
hatása a városokra a COVID-19-pandémia alatt*



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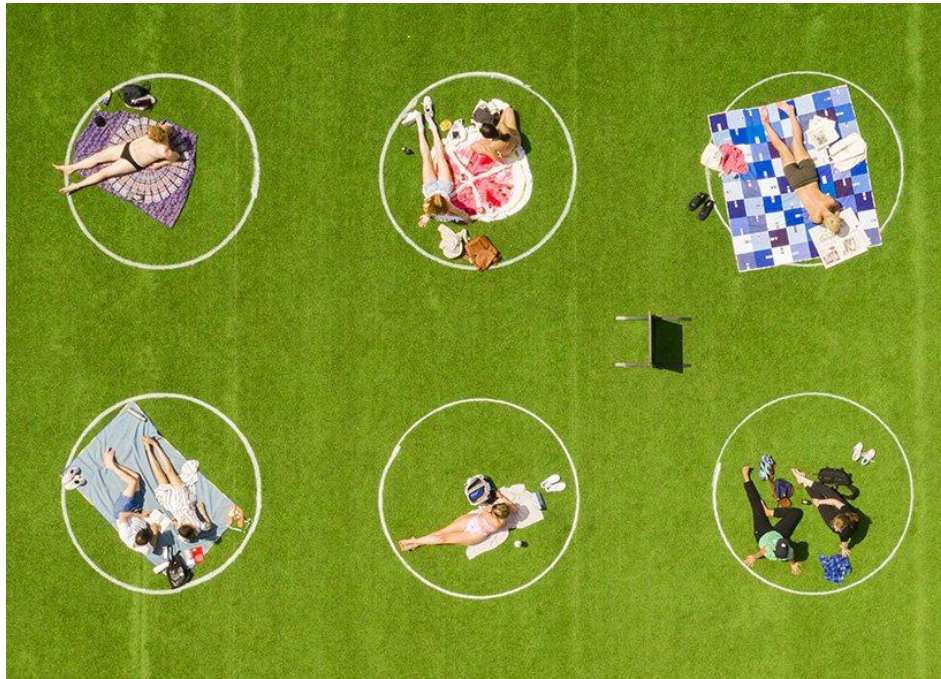
Abstract

The paper discusses the current situation about how the pandemic reshapes our cities and daily life behavior from different perspectives. With the outbreak of the pandemic, governments implement several public health policies to mediate the transmission rate and protect public health. Restrictions on the use of public space and social distancing are currently regarded as the most effective temporary urban measures. However, the sudden physical limitation provokes the public to rethink individuals' space in the public areas, the relationship with nature, and the influence on mental health factors. Communities need an effective emergency response, contagion control methods, adequate housing for all residents, physical and mental support for isolated people, and affordability to improve resilience. It comes along with some urban strategies emerging to accommodate social distancing from more green spaces to wider cycle lanes for the sudden growth of the number of cyclists. During the quarantine period, the definition of public space has a new interpretation.

Cities as the carriers of a high population contain the potential risks of the pandemic. It also reveals the vulnerability and resilience of urban systems. The discussion should analyze from the urban framework by place matters, cyberspace, density, access, and the city-region. The crisis stimulates debates over the long-term impact on public space in the post-pandemic world and also how urban planners and policymakers in different countries tend to take transformative actions towards creating more resilient, and sustainable cities. There is also a concern over the relationship between urban density and its impact on pandemics. The intention of the essay is to analyze the urban strategies in different urban density countries. It is considered that the metropolitan population is one of the significant predictors of infection rates. However, as the dynamic of the infectious rate track, it turns out country density is not significantly related to the infection rate. There are other factors in different perspectives affecting the transmission rate and mortality rates.

The paper tries to analyze the different urban structures of these cities and their practices in current situations. This research aims to define and launch strategies for post-COVID cities to react promptly to epidemics in the future. These adaptive approaches should be taken spatial arrangements and availabilities, urban structures, economic situations, social attributes, and cultural background into consideration. The essay also concerns about urban management, governance, transportation and urban design that can be allocated for post-pandemic urban planning. The literature reviews emphasize on the factors: decentralization of facilities,

hierarchization of the transport system and public services, and redundancy of public and semi-public functions.



Source: <https://www.designboom.com/design/domino-park-circles-glass-social-distancing-05-19-2020/>

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Introduce pandemic, lockdown and social distancing

Since this February, the new type of pandemic has been broken out worldwide. Due to globalization, the corona-virus spread between countries accelerates at a high speed through the frequent air traffic and hustle urban activities. It was used to be more than 120,000 daily air trips and carrying over 12 million people before the pandemic. With the high development of transportation, the pandemic affects more than 200 countries in less than 90 days. The transmission speed was too fast to react. Capitals like New York became the hotspot in this crisis. The whole society was overwhelmed with the medical resources collapse, shortage of necessities and fear of death.

Urban living represents the carrier of high population and mobility, for example, the exchange of resources, heavy traffic network and the dense population flow. Some studies indicate that urban life offers better life standards than villages. Overall, dense urban living brings advantages like convenience than any disadvantages. However, the pandemic takes us backwards to reflect on the potential risk in the dense city life, which has been regarded as the epicentre of the crisis during this period. It is believed that there might be higher infection rates per capita in the city compared to the less dense or rural areas. The risk reveals the incomplete of the previous urban planning and the importance of resilience.¹² With the outbreak of the pandemic, also known as the epidemic of COVID-19, the world faces the “new normal” in 2020. There has been approximately one-third of the population under lockdown and public transit ridership has decreased by more than 80%.

Currently, the whole situation is still uncertain. Based on the previous pandemic pattern in history, the crowded and unsanitary society may lead to a regular outbreak of a pandemic. Therefore, the restriction on travelling and physical contact is commonly regarded as an essential protocol. It seems that there is a long way in the foreseeable future to return to the previous lifestyle until the effective vaccine or medicine become available. The emergency measure is to flatten the infection rate. The society changes have swept over from economic to social perspectives.

Many of the preventive measures implemented in lockdowns have eroded the essence of city life. It also reveals the vulnerability and resilience of urban systems. Instead of immersing into the nostalgia of former social interaction, urban planners get aspiration and take the challenge as opportunities to examine how the pandemic reshapes our cities and daily life behaviour, to develop the new pattern for the universal society, and to catalyse positive change in our built environment. The fierce discussions over adaptations for communities aim to meet the public needs in the

¹ Coronavirus and urbanisation: Do pandemics are anti-urban? Public space has been traumatized in the crisis. It is highly possible to redefine our relationship with public space amidst and after the period.[The Impact of COVID-19 on Public Space: A Review of the Emerging Questions

² 危机与转机：突发公共卫生事件下的城市应对思考—以广州为例 邓毛颖

viewpoints of urbanism to facilitate the congregation. We need to recognize and accept the new attitudes and social practices.

One of the precautions is to keep social distancing, about 1.5 meters away from each other wherever possible in order to prevent droplets transmission. The other is self-isolation, which means staying at home or the limited space from any possible direct interaction with others. There are three conditions that may cause the potential risks of infection: closed spaces, crowded spaces, and close-contact situations. However, if the government closes public areas for the fear of the pandemic, it will end up pushing the crowd into the rest of the limited alternatives. It leads to uneven compression. Thus, the public dilemma is to balance the sufficient open space for the majority. Besides, communities require more strategies for contagion control, necessity delivery, adequate housing, mental supports for the elderly or the isolated.³ Some are optimistically looking forward that the crisis will drive the social systems towards sustainable and socially positive urban environments.

The relationship between social distancing and community

When the respiratory epidemics emerge, governments implement several public health policies to mediate the transmission rate. The official precautions include the closure of some public facilities like school and museum and promote self-isolation at home. So far, the reduction of intimate contacts between people is widely regarded as the most effective and economic approach to avoid the spread.⁴ However, the sudden physical limitation provokes the public to rethink individuals' space in the public areas, the relationship with nature, and the influence on mental health factors. The image of the city has also converted since these implements. Not only urban designers, but also local communities, developers, and municipalities play important roles in the crisis. There are many large or small plans popped up to make a change. Basically, no one is an outsider now. Currently, individuals begin to value their personal space and the necessity of green areas in public more.

First, pedestrians slow down their path and search for public parks in neighborhoods. Later on, the needs for wider bike lanes climb while the vehicle amounts on street, and highways suddenly drop. The public notices that there is a need for better walk-able and biking environment. When it comes to urbanism in a pandemic, living and working pattern, distancing measures, and urban dynamics becomes three main topics in discussions. Urban planners focuses on how to integrate with community health practices and reshape urban design more than traditional disasters to improve

³ Pandemic-Resilient Community Planning Practical Ways to Help Communities Prepare for, Respond to, and Recover from Pandemics and Other Economic, Social and Environmental Shocks

⁴ Urban nature as a source of resilience during social distancing amidst the coronavirus pandemic

the resilience of urban life.⁵

People are more tensed about their personal space and engage more interest in shaping the living environment around them. Social cohesion is believed to be the key point to survival and resilience in the most vulnerable urban hotspots. In some North Europe countries where the local communities promptly react to the new normal, their participation in the public process is essential in many contexts and provides them with better resilience to reshape their life order. The newly connected community is able effectively to face the challenges of the pandemic.

Traditional disaster management concentrates on extreme events, but the risks contain not only severe shocks but also stress.⁶ As the increase of quarantine time, the related social issues come after. There are concerns over the increases in sudden job loss, domestic violence and the mental condition for the isolated.⁷ Apparently, social distancing has already disrupted our communities life. Even working from home, people still suffer from overwhelming helplessness when restricting at home every day. A study reveals that the public suffers from post-traumatic stress symptoms, so it is important for communities to gain urban nature in the neighbourhood in such an emergency circumstance. Because it provides the resilience to maintain well-being and away from the physical regulation pressure. Outdoor activities in nature like gardening and cycling improve the mental condition and decrease anxiety and depression about the changes. There is an urgent need during lockdowns for communities to allocate effective emergency response, contagion control methods, physical and mental supports for vulnerable groups like the isolated elderly, and affordability to improve resilience.

Current Pandemic-Resilient Community Planning

The new normal has redefined the interpretation of public space during the quarantine. The urge has soared along with the strong panic in the society for any strategies which can be implemented everywhere. With lacking understanding of the new pandemic, it is difficult to establish the criteria for contagion prevention. It seems that there is no difference between the environmental factors or climate preference for the virus to spread. The contagion rate remains high from Russia to South America. However, the expert estimate the second wave may arrive when the flu season approaches. We have

⁵ Coronavirus questions that will not go away: Interrogating urban and socio-spatial implications of COVID-19 measures

⁶ 从城市防灾到城市韧性—“新冠肺炎疫情”下对建设韧性城市的思考

⁷ Changes of urban activities and behaviors due to COVID-19 in Japan

seen the diversity of allocation between countries, so the analysis and categorizes of the practices based on different urban structures become more practical method in the current situation. Laia Bonet stated that the pandemic has been a stress test that has shown us that we must build more resilient cities at a social, ecological, urban and digital level.⁸ Now the universal strategy known as social distancing is totally against the initial form of urban life. People are forced to self-isolation in small square meter space in the compact city.

There are vast issues that Covid-19 covering, including land usage, remote working, transportation and so on. However, society focuses on how public space transforms their daily life.⁹ For the emergency-aid measures during the initial burst out, public spaces like park, stadiums or library, suddenly reconstructed into cabin hospitals to shelter the high-risk patients while most of the healthcare infrastructures are fully occupied. The need for resilient public spaces in the cities rises even when the peak is over. There is the long term need for the drive-thru testing centres in the spacious area in the sprawled city with well circulation arrangement instead of the testing booths in the neighbourhood or mixed with other patients in the hospitals.



<https://www.itdp.org/2020/09/25/density-is-not-the-problem-covid-19-and-cities/>

⁸ The deputy mayor for the 2030 Agenda, Digital Transition, Sports and Territorial and Metropolitan Coordination of Barcelona City Council

<https://unhabitat.org/barcelona-and-un-habitat-mark-world-habitat-day-with-hybrid-urban-resilience-event>

⁹ DOI:10.1080/23748834.2020.1780074

With the low social interaction, the strong nation of city suddenly weaken. The demand for office buildings in New York has decreased and the concept of the city has become blurred. Will the epidemic make us re-discuss the meaning of the city and no longer break it? People may live in a community with sufficient functions where they can meet daily needs in a short distance and requires intensive and inter-community activities to avoid contact with strangers. From the other side, thanks to the current technology, the virtual world forms our new type of social life. Some drift toward digital interaction not only for its convenience advantage but also for public health concern.¹⁰ The urban dwellers tend to shift back to suburb and wait for the recovery of the life pattern. They choose to move to the suburbs for long-distance work while avoiding high living expenses, but waiting for the epidemic to recover. Since the uncertainty force them to return to urban life at any time.

Because of the pandemic, we have to maintain these adaptive strategies like open activities and public transportation transit. Yet, Zohran Mamdani mentioned that there is a need to consider whether these measures determine the future of the cities.¹¹ The crisis may offer new opportunities to reshape the cities. The concept of paradigm shift from Thomas Kuhn explains why the crisis may be other possibilities for the cities. With the rebound of the second wave, teleworking and remote learning have been prolonged. The tenants begin to reevaluate the need for costing rental in the cities. However, capitals are not able to demolish. Once the situation become under control. The public will return to the former life pattern for sure. But, it reflects that the notion of the metropolis should convert from the pretext of creating economic growth back to the well-being of citizens living standards.

Restart Budapest

Because of the limited medical resource and daily accumulated cases in Budapest, the local government free thousands of hospitalized patients back to the families and social care systems. It can protect hospitals' resources from the verge of collapse and also further healthcare-associated infection. Due to the strict curfew this Spring, the pressure of outbreak releases. However, there is the emergence of a second wave of the coronavirus epidemic recently along with flu season. The second phase of defense

¹⁰ Coronavirus and urbanisation: Do pandemics are anti-urban?

¹¹https://www.curbed.com/2020/10/future-of-real-estate-nyc.html?utm_source=Sailthru&utm_medium=email&utm_campaign=One%20Great%20Story%20-%20October%2013%2C%202020&utm_term=Subscription%20List%20-%20One%20Great%20Story

is to prevent repeated spread. The epidemiologists consider that the peak of the second-wave will reach this December to next January. Currently, there are hundreds of new cases every day since the summertime, and the numbers are still climbing up. How to protect the elderly and the nursing houses is the priority. Any unnecessary visiting in those health care facilities is forbidden for the security reasons.

For commuters, it comes along with some urban strategies emerging to accommodate social distancing from more green spaces to wider cycle lanes for the sudden growth of the number of cyclists. During the pandemic, local government uses the tactical urbanism to establish temporary pop-up bike lanes cross Budapest, the capital of Hungary. The authority observed the transit ridership for weeks, and found the fundamental transformation in the past traffic congestion problem. The number of passenger in bus has dropped 90% and for vehicles the number also halves. Therefore, the new bike lanes make up the public fear to the public transportation and also the insufficient parking space problems. It divides the commuting flow with more secure transportation choices. Tactical urbanism usually implement in cities. Its low cost and temporary features provide a fast solution for cities to react in local neighborhoods during the pandemic. Although these bike lanes are temporary solution, the public opinion considers that it is necessary to maintain the changes permanently. These challenges reshape the urban transport. Social distancing offers these sustainable options another reasons for the public to embrace. Pedestrian and cyclists ease the pressure on public transit systems and contribute to better public health, and reduce air pollution.



<https://www.itdp.org/2020/09/25/density-is-not-the-problem-covid-19-and-cities/>

Temporary Experimental Urban Transformation

Tactical urbanism interventions are prompt, temporary, and low-cost projects which are featured with the potential long term change in the community. Although this kind of intervention may be small scale, it is also possible to increase the huge impact. The following examples listed by hierarchy from event transformation to simple street renewal till temporary small scale community intervention. The commonality of these strategic interventions is that they can be quickly established and then immediately received a public response. Simultaneously, these strategies temporarily relieve the overall pressure for the sudden transition in communities. The ambition of these interventions is to testify for long-term urban planning. These strategic plans are more flexible and experimental compared to the long-term detailed counterparts. In this process, the urban planners or authorities concerned to explore the different possibilities of urban planning. In the era of rapid social changes, sometimes the past theories may not be able to totally apply to current needs or explore the development in near future. Such experimental strategies can more accurately try to find out the needs of contemporary society and create different solutions for future long-term development.

The revival of drive-in theater gain popularity during pandemic. Obviously, this is not typical social relationship. Yet, the drive-in concerts definitely meet the need of social distance and also fulfill the desire of minor social interaction compared to the isolation at home.



<https://pestihirlap.hu/2020/07/01/koncert-az-autobol-kulon-frekvencian-oriaskivetiton/>

In Oakland, the urban experiment called "Paint the Town" applied to the blacktop, which is rare in the common cases. However, it is believed to enable to establish new public space based on the closure of the driving path.

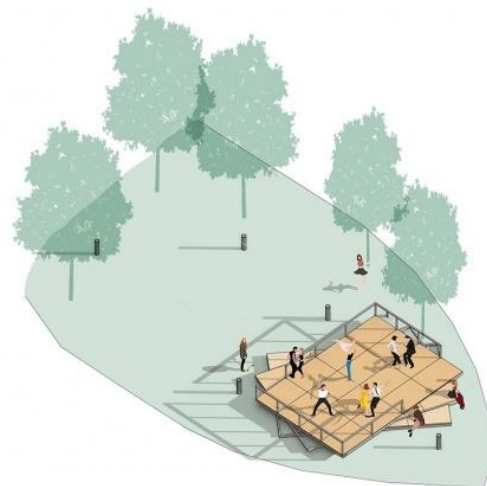
Vivid designs offer a clear division between road and pedestrian paths, and further achieve traffic-calming effects on roadways. This kind of small intervention of place-making is not merely for the safety function but also the aesthetic reason. Besides that, it boasts more social engagement which is one of the important criteria for urban design. While roads provide the negative image for the pedestrians, it rises for those who live there the positive resonance on the community especially under the strict control of social distancing. The effort transformed streets from simple traffic connection to cultural bondings.



<https://www.bloomberg.com/news/articles/2019-10-29/to-transform-a-street-just-paint-a-park>

Another temporary reconfiguration of street activities is placed in Austria. There is a three-week seven-lane crossing temporary project called Gürtelfrische WEST in the public realm. The experimental public space transformation provokes the discussion. If quarantine as a new normal has been the future city image, how it is possible for the public to regain the vibrant living vibe and leisure space with urban quality. The project is composed of several leisure facilities for all ages, such as a swimming pool, sunbathing lawn, dance and movement programs, consumer-free zones, catering, and mobile furniture. There are even some trails to transform empty buses into workshop laboratory and hotels. Since the pandemic, roads, and streets in cities have been deserted. The crowded traffic is replaced with silence and emptiness. The Vienna mayor describes the experimental project as an oasis of joys in this extreme circumstance. It brings the discussion of city transformation and the lesson from the pandemic about the redistribution of urban space. Urban life is undergoing a renaissance. During the pandemic, urban dwellers are forced to squeeze into the

limited sharing space, therefore, there is a need that the brown fields in public should be reconsidered in the urban design. These potential unused urban space provide alternatives to closed public facilities. These public space offer resilient capacity for cities. They are able to transform into shelters for emergency medical purposes. Additionally, we should reexamine the possibility of rooftop design in cities.¹² for example, thousand of rooftops are identified in Barcelona but only few are used as city gardens. Balconies or rooftops where used to be secondary space in daily life become important buffer zone between unsafe outside and private space.¹³ Although social distancing is the most simple and effective methods to control the contagion, we must also face the soaring desire for leisure in the hybrid compact neighbourhoods integrating urban agriculture during quarantine, as well as buildings with adequate space.



<https://www.guertelfrische-west.at/>

Urban Nature and Urban Resilience

In North Europe, they allocate more soft policies to control the transmission rate while most of countries tend to restrict the quarantine with high fine or with serious regulations.

¹² Post-Pandemic Cities - The Impact of COVID-19 on Cities and Urban Design

¹³ Rethinking rules and social practices. The design of urban spaces in the post-Covid-19 lockdown



<https://www.itdp.org/2020/09/25/density-is-not-the-problem-covid-19-and-cities/>

The Swedish public health institute asks those who feel sick staying at home and isolate themselves for several days until they recover. The measure is able to maintain low level of spread rate because there is still uncertain how long it takes to recover and the incubation period is. In those countries where are overwhelmed by the outbreak, one of the main reason is the collapse of medical facilities and loss of health care workers. The movement volumes in parks in Sweden have obviously increased. It shows that the public tend their focus on the value of urban nature instead of waiting for guides from the authorities.¹⁴

Another example from Finland is how a functional city functions its resilience in pandemic. The definition of functional cities means the effective and seamless public service in system. It also considers the whole society engagement as the priority. Helsinki combines with three pillars to cope with the pandemic crisis. Firstly, as a smart city, Helsinki shows the strong foundation of digital service delivery. By using the technology and sensors to collect data and offer digital service, it takes less transmitting period into remote learning for students and more supports for the citizen to maintain social isolation policy. Secondly, the inclusive society feature in Finland offers a rapid response to implement new policies during pandemic. Community participation is at the center of policy making for the prioritization of budgets and investments. Lastly, the city goal as the set on a course to achieve carbon neutrality by 2035 with the improvement of public transportation and decrease of the use of private cars, and additional charging station for electronic cars. The carbon emission is expected to reduce. Also the whole society encourages more pedestrians and cyclists for commuting. These optimal design for cities are based on three main pillars which

¹⁴ Access to natural habitats can help to maintain well-being in times of social distancing

contribute the city to be smart, sustainable, and comprehensive.

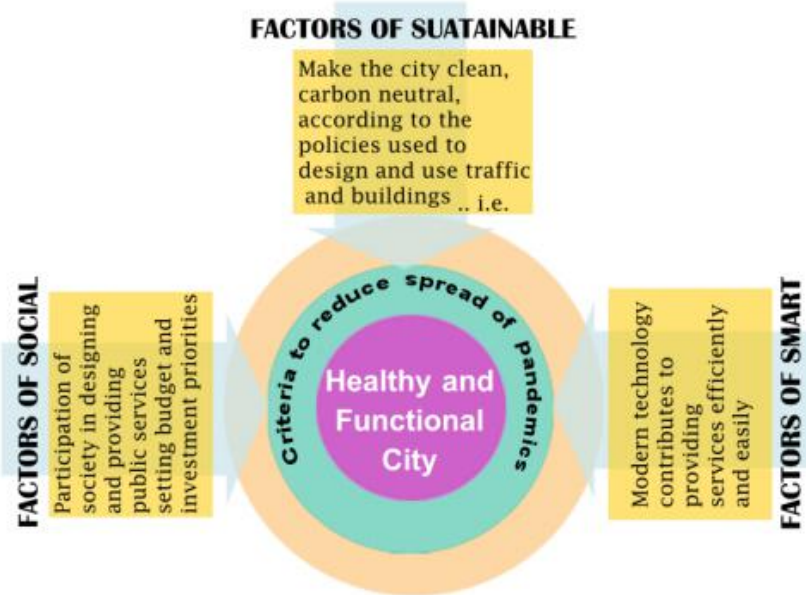


Figure 8. Main pillars of the healthy and functional cities [Source: by the authors]

While this will be one of the biggest challenges that urban planners will face, the pandemic can also be an opportunity to accelerate the shift towards the 'green new deal', he said.

The risk with high density and poor infrastructure in informal cities

According to the estimation of the United Nations in 2019, there are around a quarter of the world's urban population which means a billion people live in informal settlements and slums. The overcrowded neighbourhoods situation becomes harsher to the urban poor there while the whole world is confronting the pandemic with the same shortage of resources and medical assistance. Owing to the improper living environment and sanitary, they are also at risk of contracting and spreading the coronavirus.

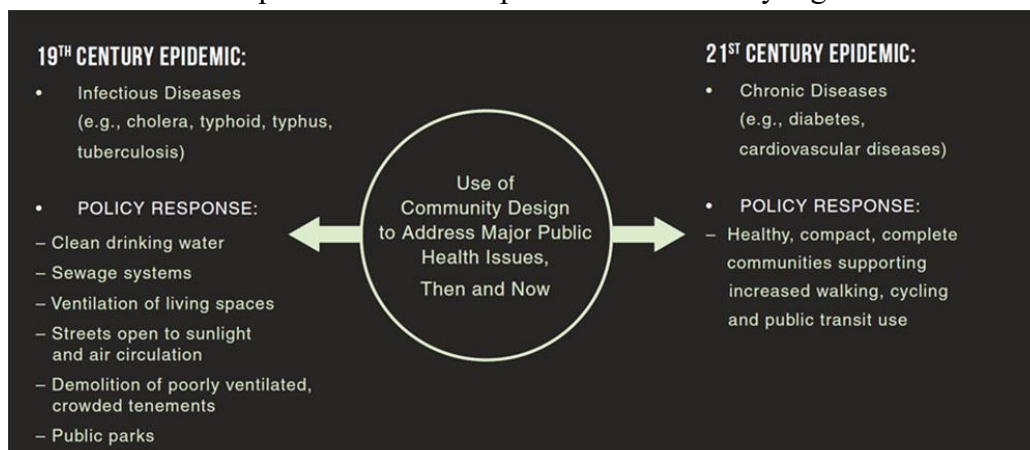
This March, the Indian government conducted the strict national wide lockdown in response to the pandemic outbreak. Vehicles and shops are highly restricted, and only a few of them are allowed to operate. It brings a huge backlash from society because of the deficit in supply of essentials from the normal. Shivani Chaudhry, executive director at HLRN, appeals to the government that authorities must enforce a moratorium on evictions for the homeless. Additionally, they should also provide

emergency accommodation and healthcare services. Demolishing and rendering the homeless would result in increasing their vulnerability to contracting and spreading the virus in public. In India, at least 4 million people are homeless in urban areas, and more than 70 million live in informal settlements. Under the circumstance, the vulnerable confront the depth and complexity of implementing these uncomprehensive principles.



<https://www.eco-business.com/news/in-slums-and-windowless-apartments-asias-poor-bear-brunt-of-coronavirus/>

Pandemic is the public health crisis especially to the poor. In history, the slum in London also faced the outbreak of cholera owing to the poor sanitary condition and compact city size hundreds of years ago. It led to the reconstruction of the sewage in cities, which improve the environment. When we discuss the ability of the class difference to react to the pandemic, it rises the problem to the human right level. In the past year, real estate is considered as the commodity in most contexts. Homelessness has consistently increased. The current situation deteriorates and reveals the limitations of current housing policies for the majority to afford houses. The risk that the impacts on the urban poor are considerably higher than elsewhere.



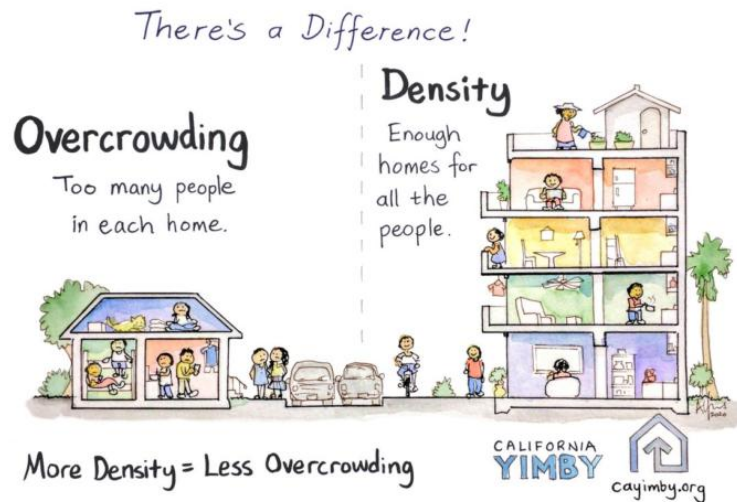
Whether high density city will affect the infection rate

The compact city with high population is usually regarded as the ideal model for urbanism development, because the efficiency of cooperation networks in cities release the pressure of rapid population growth. Yet, it is criticized for the sacrifice of individual's sufficient living space and well-being for natural inhabits.¹⁵

There is a debate over whether high density urban environment is a petri dish for pandemic. The intimate interaction in cities is believed to attribute the virus transmission. High residential density also means the overcrowding in space, which makes social distancing more difficult to be implemented. However, more recent researches reveal that the main factors for outbreak is the inequity and delays in governmental responsiveness, not the overcrowding.

The urban system should be cooperation with the tight social network, but suddenly the density of cities becomes the original sin to be blamed for the outbreak. There is a mass of conversation that speculated about density being to blame. However, high dense cities like New York has flattened the curve compared to its surge in the beginning. Low infection and the fatal rate is along with the series of policies and has also proved that urban density is not the main problem. Also, other compact cities like Hong Kong and Singapore set an example for the importance of proper intervention in time from the government. Perhaps, in the beginning, the high-density cities tend to break out with its intense traffic network and even sprawl to the surrounding suburb. But, with the control in policy, the curve will flatten by time, and with the abundant medical resource, the fatal rate is also decreased since most of the cases can be under well medical treatment if the case numbers do not exceed for the limit of the hospital system.

¹⁵ Urban nature as a source of resilience during social distancing amidst the coronavirus pandemic



<https://www.itdp.org/2020/09/25/density-is-not-the-problem-covid-19-and-cities/>

Population density in urban area is doubt with the connection of infectious disease control. The problems seem to deteriorate with climate changes when these natural disasters occur more frequent and intense.¹⁶ Those who believe urban sprawl influences the spread rate. They find that urban areas with greater density and with a greater share of land use in commercial-industrial categories have a significantly higher per capita incidence of the disease.¹⁷ Yet, there is also a research that indicates the contact rate is related with population size and not with the population density.¹⁸

Density is not the main criteria to identify the pandemic spread risk. Of course, rural areas have more spacious social spaces and simpler social structure for the individual than cities. Yet, what more important is to rapidly respond and conduct strategies in the early outbreaks period. Even if the initial outbreak is controlled, there may be a potential following the second wave. Therefore, there is no guarantee for the timeline when the new normal ends. The long-term consistency for prevention strategies like isolation and circulation division strategy is needed until the achievement of the medical treatment.

Urban planning in a post-pandemic world

There are 3 steps (shift-avoid-improve) to make urgent actions in the pandemic period.

¹⁶ Smart Technologies and Cities, Specialty Grand Challenge

¹⁷ Doubts about Density: Covid-19 across Cities and Towns

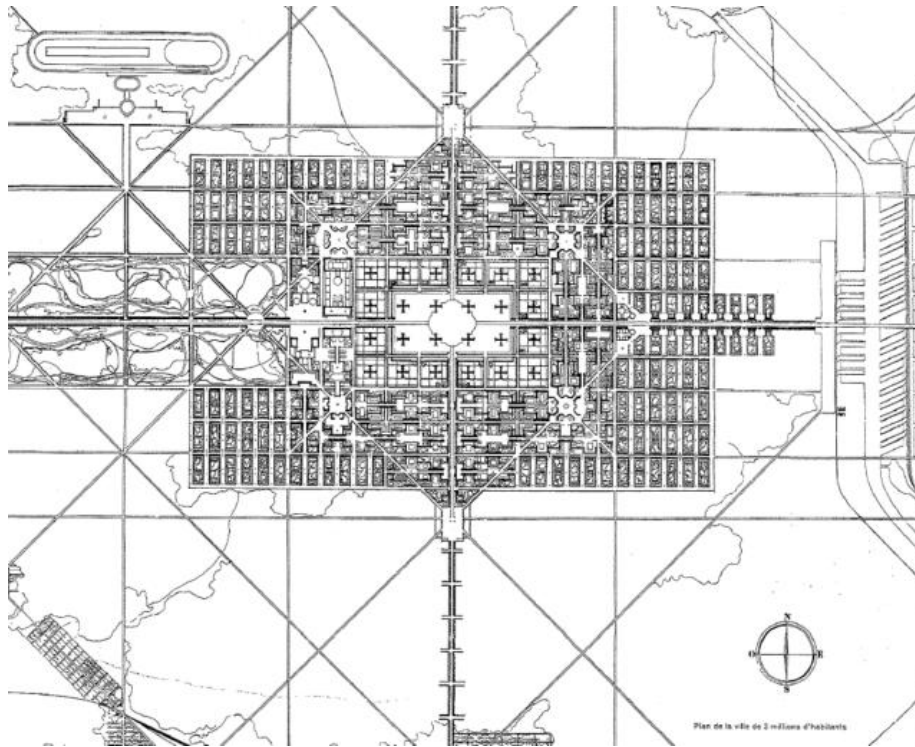
¹⁸ URBAN SCALING OF COVID-19 EPIDEMICS/ May 19, 2020

The urban transportation shifts to sustainable options, like walking and biking. The transition to sustainable transport is possible to contribute to a green recovery in cities. People are more willing to avoid unnecessary mobility during the crisis. No physical interaction may be struggling, but it is not just challenging to follow compared to the risk. Working from home and online shopping suddenly become the mainstream of the modern lifestyle. Later on, the government tends to improve the transport infrastructure and remote services, and make the complicated process more accessible to the public.

Shift	Avoid	Improve
<ul style="list-style-type: none"> • Walking • Biking • Public Transport • Telecommuting 	<ul style="list-style-type: none"> • Commuting by car • Unnecessary travel 	<ul style="list-style-type: none"> • Broadband • Frequency of service • Quality of infrastructure

Although the current situation is unclear to foresee the end of the chaos, we can still base on what the whole world has been through to categorise and reflect. From the bright side of the viewpoint, a post-COVID society might value these flexible adaptive strategies as assets. Public spaces are essential to a resilient city because of their ability to be transformed for emergency health purposes and also the buffer zone for the public to reach some nature in the compact city. Jan Gehl, a Danish architect, said that “Wherever people stay for a while, they seek out places along the edges of the space.”

The urban density will keep increasing. By 2050, it will accommodate an additional 2.5 billion urban dwellers. Especially for some countries like China where are even 15 megacities with populations larger than 10 million population. The concepts of Ville Contemporaine from Le Corbusier may provide some possible solution for post-pandemic society in compact cities to evacuate urban centres, improve traffic, and provide green space, sunlight and space. However, decentralisation should be considered the risks of cross-contamination between related urban systems.



In the past months, large green spaces, convention centres or stadium have temporarily converted into emergency hospitals. In the post-pandemic, the design of these large public spaces in cities should be taken into consideration in response to any diasters. It should be more modular and permit flexibility.

Conclusion:

As the time when this essay is about to finish, the second wave already starts to backfire to worldwide. As cities continue to grow such pandemics are increasingly inevitable and new planning and design approaches are essential to prevent and adapt to future crises, protect citizens and prepare for upcoming disasters. It ia believed that the experience globally will lead us to reflect on the need for urban design in the future. The pandemic could be another urban renaissance across the city.

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