



# TeMA

This Special Issue of TeMA - Journal of Land Use, Mobility and Environment, collects twenty-seven contributes of international researchers and technicians in form of scenarios, insights, reasoning and research on the relations between the City and the impacts of Covid-19 pandemic, questioning about the development of a new vision and a general rethinking of the structure and urban organization.



Journal of  
Land Use, Mobility and Environment

TeMA Journal offers papers with a unified approach to planning, mobility and environmental sustainability. With ANVUR resolution of April 2020, TeMA journal and the articles published from 2016 are included in the A category of scientific journals. From 2015, the articles published on TeMA are included in the Core Collection of Web of Science. It is included in Sparc Europe Seal of Open Access Journals, and the Directory of Open Access Journals.



*Special Issue*

**Covid -19 vs City -20**

scenarios, insights, reasoning and research



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# TeMA

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*Special Issue*

## COVID-19 vs CITY-20 SCENARIOS, INSIGHTS, REASONING AND RESEARCH

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**Editorial correspondence**

Laboratory of Land Use Mobility and Environment  
DICEA - Department of Civil, Architectural and Environmental Engineering  
University of Naples "Federico II"  
Piazzale Tecchio, 80  
80125 Naples  
web: [www.tema.unina.it](http://www.tema.unina.it)  
e-mail: [redazione.tema@unina.it](mailto:redazione.tema@unina.it)

Given the short time to produce the volume, the Editorial Board of TeMA Journal carried out the scientific quality audit of the contributions published in this Special Issue.

The cover image is a photo collage of some cities during the Covid-19 pandemic quarantine (March 2020)

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## *Special Issue*

### COVID-19 vs CITY-20

#### SCENARIOS, INSIGHTS, REASONING AND RESEARCH

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## Megacities facing Covid-19 pandemic

How to use urban spaces in Tehran after the new pandemic

### Elmira Shirgir

School of Architecture and Environmental Design,  
Iran University of Science and Technology, Tehran, Iran

e-mail: [shirgir\\_e@arch.iust.ac.ir](mailto:shirgir_e@arch.iust.ac.ir)

ORCID: <https://orcid.org/0000-0003-3444-3144>

### Abstract

The first cases of Covid-19 occurred in the winter of 2020 in Wuhan-China. The distinctiveness of the new pandemic is that it has occurred in '20th century megacities, cities with a large population who use the city as their second home during the day to commute to work, socialize & etc.

After the emergence of Covid-19 in February 2020 in Iran, and its capital city, Tehran, new restrictions and rules were put on the way citizens of Tehran were to use their city and its public spaces. These restrictions limit the use of these spaces to a great extent and it seems like these new limitations are here to stay for an unpredictable amount of time until a new medicine or vaccine is found.

The main questions here are: How can the threat of this new pandemic in cities be reduced and controlled in the future? And how can urban spaces be used from now on? In this paper, the new ways people are using the city in Tehran after arrival of the pandemic have been studied and suggestions for guaranteeing the safety of urban spaces from now on have been discussed.

### Keywords

Covid-19 Pandemic; Megacities; Urban spaces; Physical distancing; Tehran

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## 1. Introduction

As of March 11th, 2020, the World Health Organization (WHO) declared the novel coronavirus disease (Covid-19) a global pandemic (UNDP,2020). A pandemic is a disease epidemic that has spread across a large region, for instance multiple continents or worldwide, affecting a substantial number of people (Hickok, 2002). The coronavirus Covid-19 pandemic is the defining global health crisis and the greatest challenge the world has faced since World War Two. Since its emergence in Asia late last year, the virus has spread to every continent except Antarctica. Cases are rising daily in Africa, the Americas, and Europe.

Countries are racing to slow the spread of the virus by testing and treating patients, carrying out contact tracking, limiting travel, quarantining citizens, and cancelling large gatherings such as sporting events, concerts, and schools. The pandemic is moving like a wave, one that may yet crash upon those least able to cope.

But Covid-19 is much more than a health crisis. It is a *health-social-economic* crisis. By stressing every one of the countries it touches, it has the potential to create devastating social, economic and political crises that will leave deep scars. Dozens of the world's greatest cities are deserted as people stay indoors, either by choice or by government order. Across the world, shops, theatres, restaurants and bars are closing. Every day, people are losing jobs and income, with no way of knowing when normality will return (UNDP,2020).

In Iran, the first cases were officially announced on February 19 in the city of Qom. As of May 3rd, 2020, 212 countries have reported a total of 3,497,006 cases with 244,874 deaths. Along with China, USA, Italy, Spain, UK, France and Germany, Iran has been suffering the hardest burden of the Covid-19 outbreak. Today, in Iran, 96,448 Covid-19 cases have been reported with the total of 6,156 deaths. Worse still, Iran is struggling with the double burden of political sanctions to provide life-saving medical equipment and medicines to combat the emergency (Worldometers,2020). In Iran the disease epidemic began in the city of Qom and spread quickly throughout the country; Tehran, the capital city of Iran, was hit badly by the virus due to its population density and high concentration of many important industries, jobs and offices in comparison to the rest of the cities in Iran. Ever since the declaration of the spread of the disease in Tehran, many limitations have been put on the presence of citizens in public and urban spaces.

In other words, the way these spaces have been used has changed to a great extent, a change that may be present for an unpredictable length of time. The main way this new disease can be spread is through 'respiratory transmission' (person to person). There are also findings suggesting that the virus could be left on surfaces and stay alive for hours and even days, therefore it can be transmitted indirectly to some extent as well. Based on the virus's mode of transmission, which makes it highly transmissible, new measures were taken by the government to put restrictions and bans on the way people use the city during this pandemic.

Although the outbreak of Covid-19 is slowing down after almost two and a half months of placing restrictions and *physical distancing* (*social distancing*) in outdoor urban spaces, given the virus's mode of transmission there is still the fear of 'rising numbers of new cases' by reducing the restrictions in place. An additional concern relates to a potential rise in numbers in Autumn 2020 due to the start of the colder season, although the relationship between this disease and the seasons and temperatures has not yet been fully confirmed. This fear has resulted in precautions being taken that must be applied until a new vaccine or a type of medication is made available.

The main questions here are: how can the threat of this new pandemic in cities be reduced and controlled in the future and how can urban spaces be used from now on. In this paper, the new ways people are using the city in Tehran after arrival of the pandemic have been studied, and suggestions for guaranteeing the safety of urban spaces from now on have been discussed.



## 1.2 The city of Tehran facing Covid-19 pandemic

Tehran is the capital of Iran and of the Tehran Province. With a population of around 8.7 million in the city and 15 million in the larger metropolitan area of Greater Tehran, Tehran is the most populous city in Iran and Western Asia and has the third largest metropolitan area in the Middle East (after Cairo and Istanbul). It is ranked 24th in the world by the population of its metropolitan area (Madanipour,2016), (Fig. 1).



**Fig.1 Tehran's geographical location in Iran**

Since the beginning of the pandemic, although there is no official lockdown in any cities yet, as in China and Italy, traveling in and out of Iran's 36 provinces and cities is restricted. This travel ban includes cities like Isfahan, Shiraz, Yazd, Gilan, Mazandaran, Kish Island. The authorities have taken various measures like closing schools, universities, theatres, and even parks and outdoor recreational spaces, putting public religious ceremonies on hold and urging people to stay at home and not leave for unessential activities. These restrictions were put in place on February 21st, 2020 as first cases were found and went on for about 8 weeks. During this time, almost all the streets and public places were empty. People on the street, buses and supermarkets were asked to wear a face mask, disposable gloves and to keep a physical (social) distance of about two meters. After two and a half months, as new cases numbers began to drop, authorities began to lift restrictions step by step, along with imposing new precautions for using the city streets and spaces. One of the recent ones are protecting taxi and bus drivers with special shields that separate the driver from the passengers, while passengers are asked to stand or sit following the appropriate distancing on trains and other public transportations (Fig. 2).

As for appearing on the streets, squares, parks and other outdoor and indoor spaces, people are required to cover their faces with masks, wear gloves and keep their hands clean at all times (Fig. 3). What is missing are methods to help guide citizens to keep their distancing on the streets and sidewalks. And the major issue is population density in this megacity. As public places are being opened up to citizens of Tehran, streets are getting crowded, therefore distancing is becoming more difficult. So as can be seen so far, in Iran and other countries, based on the knowledge that has been gathered about the virus and the way it is transmitted, authorities of the countries involved, and also citizens themselves, have come up with ideas and methods to protect lives against the virus in this short space of time and to so far somehow be winning the battle with this invisible enemy.



**Fig.2 Passengers of public transportation and drivers must wear face masks and keep the safe physical distance**

### 1.3 Conclusion and suggestions

To conclude, it can be claimed that rules and restrictions have gradually formed with the passing of time, it is in human beings instinct to defend themselves against a biological enemy. These methods, rules and restrictions, although preliminary and impetuous, have been quite successful so far, therefore it can be suggested that:

- These rules should be maintained and even developed into planning strategies, principles, design methods & etc;
- Since this disease has been predicted to stay on the planet for quite a while, it is a good time for experts to establish fixed rules and restrictions after the first decrease in numbers of the disease so that the next time it arises, it will be easier to use public spaces and the city, without having to lock down people in their homes and to shut down businesses which imposes a great economic and social burden on people;
- In order to keep physical distancing on streets and footpaths and parks , the right distances must be marked with color or any urban elements to help citizens find the places to stand or do exercises outdoor or even to stand for a chat with a friend;

If Covid-19 is categorized as an environmental contamination, it can be seen how fast a contamination in one corner of the world can be spread to other parts of this planet. Many environmental contaminations spread through out the world via oceans and air, but since they are not visible or because they don't harm human beings directly, they are not taken into consideration. Now that this contamination (if



considered one) has aimed at human life directly, the way a contamination can be spread through out continents, can be seen more easily. It is a good time to attract the attention of the leaders of the world to environmental issues especially climate change. More research must be done on the reasons of the occurrence of this pandemic. The relationship of this pandemic and climate change must be further studied and if proved, actions must be taken as quick as possible to help save this planet for future generations.



**Fig.3 Due to large population living in Tehran, after removing restrictions, the city streets and spaces is once again crowded with people which makes it quite difficult to keep the safe distancing with others**

- What this crisis has highlighted is the importance of public health in megacities. Major healthcare reforms must be done by local government, but institutionalization of public health measures in urban planning practices must also be considered. An example would be that hand sanitizers must be provided in all urban areas such as entrances to shopping malls and public restrooms. Face masks and disposable gloves must be provided at low prices and even for free in different parts of the city, most importantly at metro stations and on buses. On the whole, keeping public spaces clean at all times, washing and cleaning buses, metro stations, parks, sidewalks and all types of public places with special sanitizers, must be done on a regular basis for an unlimited time;
- One of the most important changes that could be made to cities would be to introduce more greenspaces, which help purify the air and absorb better light, and to also provide a sanctuary for citizens to have access to outside spaces during lockdown times, for spiritual and mental needs and also to use for exercising. It is clear that, even in these green areas, guides to help citizens with the required distancing must be included either by colors on the ground, or by planting a special tree at every correct distance or by signs. These greenspaces will be multi-functional, not only people but the planet will benefit from them;
- As in social resilience studies, the most vulnerable group of citizens facing climate change or any natural disaster are the poorest. In this pandemic, again, they are the most vulnerable because they lack adequate means of sanitation or even a place to stay safe. Locating these groups of citizens and making sure they are staying safe and healthy is very important. Many of these citizens have been reported to have had Covid-19, and to be living outdoors with no shelter.

On the whole, this pandemic has many sides to it: as stated above, it is a social-economic-health and even political crisis, so actions need to be taken on all these fronts to help address this issue. Pandemics rise, spread and disappear, as has been the case throughout history, but in return they can help change cities for the better. Strengthening urban pandemic preparedness presents an opportunity to improve global health and urban resilience and sustainability.

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## Image sources

Fig. 1: Google n.d., 2020

Fig. 2: Google n.d., 2020

Fig.3: Google n.d., 2020

## Author's profile

### **Elmira Shirgir**

She has received her PhD from Iran University of Science and Technology, school of architecture and Environmental design's in Winter of 2020. Her PhD thesis has been on urban green infrastructures and their effects on mitigating climate change effects in cities. Generally, she has been interested and concerned about environmental issues, climate change and its effects on cities for many years. Before entering the PhD program at IUST in 2016, she has had many years of experience working as a senior Landscape Architect and environmental expert, at different companies in Tehran, Iran and Sydney, Australia which has enabled her to work on many environmentally oriented urban design and landscape architecture projects. She received a master's degree in Environmental design engineering from the university of Tehran in 2005 and also a bachelors degree in Environmental engineering from the same university in 2002.