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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.

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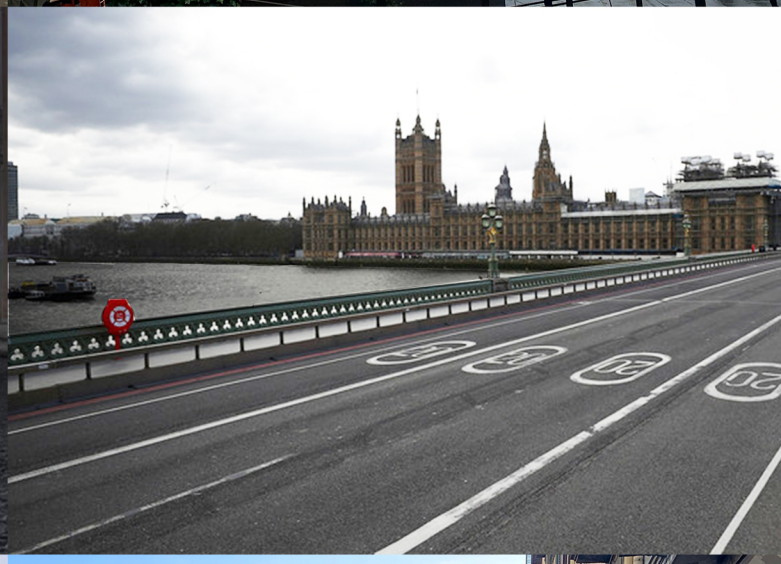
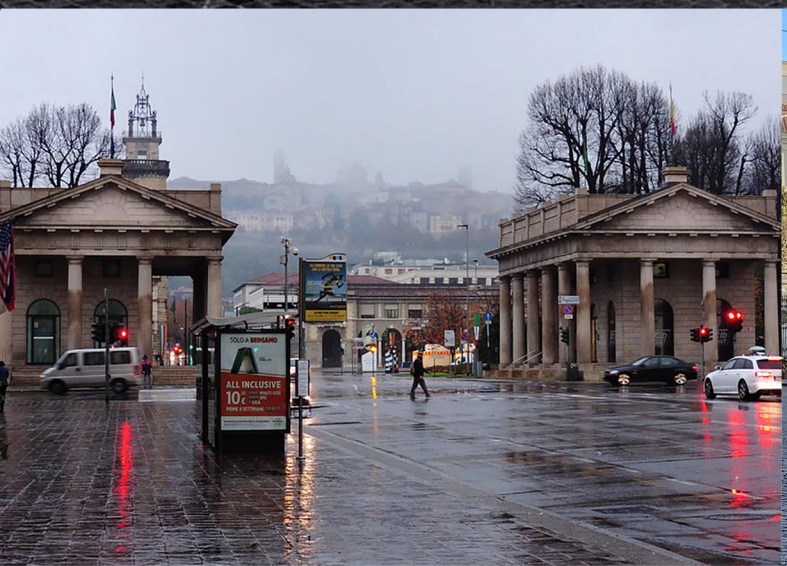
Special Issue

Covid -19 vs City -20

scenarios, insights, reasoning and research





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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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The paradigms of urban planning to emergency-proof

Rethinking the organisation of settlements at the time of a pandemic

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Abstract

Urban planning is one of the sectors that is able to provide a contribution to the definition of a desirable scenario for the future of the city and the territory as it deals with the physical and functional organisation of human settlements, more than others, also for reasons related to its historical origin.

The paradigms now acquired from a disciplinary point of view, such as densification, sustainable mobility, mixitè, urban green, etc., raise the issue of compatibility with the needs of social distancing imposed by the health emergency. One wonders if and how the principles and criteria for the physical and functional organisation of settlements, which inform and substantiate the technical-scientific documents and the spatial and urban planning instruments themselves, will change.

The response confirms the overall goodness of the organisational model shared by the community of urban planners. This can only be a stimulus to continue the research and application activities in the field with even greater commitment and determination. The crisis must in any case build an opportunity to rethink the functioning of the city, its spaces, its times and its forms of social and economic interaction, as we imagine will happen in all other fields

Keywords

Covid-19; Urban planning; Paradigms; Settlements; Social distancing

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1. Foreword

The global lockdown imposed by the health emergency has highlighted the extreme fragility of contemporary social and economic systems. The crisis we are experiencing demonstrates the unequivocal interrelation between human health and the ecosystem conditions of the planet. The global scale and the rapid spread of the epidemic have shown this reality in all its drama, but also its potential. The health of everybody depends on the health of everyone else. We are all connected in a relationship of interdependence.

According to scientists, this pandemic is unlikely to be the last. In fact, global warming could lead to the multiplication of tropical pandemics in the future, as the World Bank and the *Intergovernmental Panel on Climate Change* (IPCC, 2019) have been saying for years. This could make public health interventions more problematic and, therefore, our ability to control the spread of epidemics less effective.

Some have also put forward the hypothesis that there may be a direct or indirect correlation between pollution and ease of contagion (Coccia, 2020; Conticini et al., 2020; Fattorini & Regoli, 2020; Zhu et al., 2020). There are those who think that once the vaccine has been found, it will return to a sort of previous normality, in 24 months or less. Others are convinced that we are facing an epochal change. However, if the predictions of scientists and virologists who announce a long period marked by new possible pandemics are reliable, one wonders how many of these extraordinary habits will become ordinary.

In these circumstances, it is necessary to exploit the *crisis*[1] as an *opportunity*, that is, as a great unrepeatable opportunity for a radical change in our existence, based on the protection of the environment and health, considered as inalienable common goods.

This crisis, as we imagine will happen in all other fields, should be an opportunity to rethink the way the city works, its spaces, its times and its forms of social and economic interaction.

The emergency has revealed the fragility of the settlement structure and the strong criticality in the system of infrastructures for tangible and intangible communications. These problems, which could be not transitory but structural, force the urban planning discipline to review the criteria through which it has operated until today in great depth.

Have speeches and hypotheses on paradigms, principles and criteria aimed at a correct urban and territorial planning been swept away?

2. Urban planning and hygiene

If one recognises hygienism as being at the origin of modern town planning, then it is possible to say that this discipline was founded by doctors. Air, space, and hygiene are the figures in its most recent history (Mumford, 1961).

In the second half of the 19th century, the drawbacks created by industrial development became intolerable due to the cholera epidemics spread after 1930. The first measures to eliminate them were studied and health legislation became the direct precedent of modern urban planning legislation (Benevolo, 1963).

The origins of general town planning are, therefore, identifiable through the growing awareness of the *city evil* and in its connection to a hygienic-sanitary problem. Thus, the first forms of technical manuals on the desirable characteristics of housing, hygiene regulations and building regulations were born. Finally, the need to coordinate the various interventions through a master plan emerged (Ernesti, 1990).

There is a need to resume a common path between scientific sectors, in particular between public health and space planning. Attempts to reconnect between the two fields of sanitary engineering and urban planning

[1] It is linked to the word which in Chinese means crisis and which has two opposing interpretations: threat and opportunity.

were already present before the outbreak of the Covid-19 epidemic (Fasolino et al., 2016a; Fasolino et al., 2016b). Only recently, however, medicine has become interested in the impact of planning decisions on people's health. Think, for example, of decisions relating to land use and how to build the anthropic environment.

Health is considered to be the link between ecology, the physical - natural and built - environment, society, politics and economics (Institute of Medicine, 2001). Consequently, the rise of health problems is an alarm bell when there are elements of inconsistency between these environments.

Therefore, the emphasis is placed on the importance of developing healthy urban planning in order to ensure the health of all within a world that becomes increasingly urban and where the poor population is growing (Duhl & Sanchez, 1999). Epidemics recur periodically and thus urban planning must offer its own contribution and give answers on how the city will face the crises to come.

3. Uncertainty, vulnerability and resilience

For a long time this world has undergone a process of radical and inexorable increase in *uncertainty* and consequent *fear* (and in all likelihood this suffering will continue for a long time to come) (Bauman, 1999; 2006). Floods, drought, forest fires, sea level rising, desertification are all phenomena that will be hit hard[2].

In advanced modernity, a *risk society* has been created (Beck, 1986) in which technology can even contribute to intensifying natural disasters and amplifying their consequences (Giddens, 1990). This is the case with aircrafts that can comfortably transport the virus from one end of the planet to the other in a few hours.

Dynamic interaction and physical, social, cognitive and organisational proximity (Boschma, 2005) are the very essence of contemporaneity, where interchange is vital for the functioning of modern communities of workers. Epidemiologists warn that, after the present, we will have to organise ourselves for new potential pandemics which will be even more dangerous. Therefore, it is necessary to reflect on the characteristics of the areas in which the convergence of risk factors is occurring with greater intensity (Connolly et al., 2020) and on the probable propagating conditions of the contagion.

From this point of view, it is necessary to examine the characteristics of the land use mainly affected in our country. The geography of Covid-19 in Italy shows, in fact, the most important infection clusters located in the most innovative and densely populated provinces of northern Italy, covering a much larger territory than that of Wuhan, in China.

The latter, in fact, despite counting a population of 12 million inhabitants, insists on a very concentrated area. This means that the outbreak of an epidemic in a context that takes the form of a settlement continuum, determines a very rapid and difficult to counteract geographical spread of the virus.

Among the characteristics to be taken into account are the thousand trajectories of commuting home-work[3], consumption, school, leisure and youth entertainment, even at night, which affect a very large urbanised area, seamlessly and enclosed in very short travel times. A further confirmation of the fact that the vulnerability is primarily that of settlement on the territorial scale, caused by the ways in which the well-known *widespread city* has been configured.

In order to aim for quality growth, through the use of a circular, sustainable and highly competitive economy, it is also necessary to replace the old polluting infrastructure with a more modern, clean and efficient one, in all sectors.

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2 One of the most suggestive historical syntheses on the immanent cyclicity of pandemics is told in The Squirrels of the Plague (Davis, 1998).

3 In particular, local work systems, photographing commuting flows, should be considered as a tool for analysis and intervention. Instead, an a-spatial reading of a production system known for its great territorial variance and specialization has been preferred.

The risk society will have to focus on the *resilience*[4] of human settlements, to be considered as the main objective of the economic revitalisation policy and the creation of new jobs. This implies the need for physical and social infrastructures for the safety and protection of the lives of people and communities, starting from healthcare, in line with a green strategy.

4. Spaces and health

The great historical epidemics have always been followed by changes in the use of spaces. For example, with the Modern Movement we oriented ourselves to the rarefaction of the built, to the design of airy houses, full of windows and light, where the air could circulate freely. It is a design model that has remained, more or less, the same until the 70s of the last century. Afterwards, we returned to the pursuit of urban density for the advantages in saving resources that this paradigm brings.

The new way to deal with sociability will be the figure that will distinguish the next few months, until the arrival of the coronavirus vaccine. However, the fear of contagion could remain for a long time leading to changes (perhaps forever) in the ways of living, working, recreating, moving.

What will change therefore in the creation of new spaces and in the transformation of existing ones?

There is no doubt that two positive phenomena encouraged by the current crisis situation will remain: teleworking and tele-commerce. Telework will reduce, for the same production, individual and environmental costs, and inconvenience for the time lost in commuting. *Tele-commerce*, for the same volumes of goods, will require fewer trips (a van in a round of deliveries travels many kilometres less than when dealing with individual purchases) and, moreover, will increase competition by reducing the producers' space monopolies.

The *lockdown* highlighted the need for housing with adequate space for those living inside. This is a need that contrasts with the current Italian situation. In fact, in Italy, more than a third of households with 2-3 members live in less than 80 square meters and 13.4% of houses do not reach 60 square meters (ISTAT, 2011).

In this circumstance, one should begin to reflect on the possibility of having per-capita spaces that respond to future needs, dictated by health crises, rather than reconsidering the hypotheses of favouring the division of housing to meet the contraction of the size of the family unit.

Digitisation will affect the way we produce and work much more than before. Telework will extend and stabilize, requiring larger houses, where it is also possible to practice indoor sports, have a terrace and perhaps a condominium garden. Workplaces will also have to be reconsidered on the basis of two opposing needs: the distance between workers and the management of the spaces freed from telework. As a result, some spaces in the offices will gradually become redundant but, at the same time, more space per person will be needed. They will probably have to be designed in a new way, with meeting spaces for collaborations, rather than working individually on an ongoing basis. There will also be more attention paid to both hygiene measures and services (gyms, laundries, shops) that will be placed inside the buildings to minimise the exits. Looking ahead, in general, the space needed to live and work will increase, and therefore the demand for new spaces or for complete renovation. This demand must be directed towards the recovery of unused and underused land in urban regeneration processes and in no way to the consumption of new land.

5. Wired cities

In the next *ordinary* life, a new IT revolution will give an immediate acceleration in the use of still underutilised technological tools, the digitisation and delocalisation of work. Remote meetings have finally been discovered along with their efficiency: saving time, energy, travel costs and pollution.

[4] *Resilience* considered as the capacity to «resist, absorb, accommodate and recover from the effects of a hazard in a timely and efficient manner» (UNISDR, 2009, p. 24).

We are beginning to think about the role that work and distance learning will play in the future and, therefore, about the importance of the proper functioning of the infrastructures for basic intangible communications for functions that affect ordinary life, and not necessarily emergency situations. The emergency has also highlighted (ISTAT, 2020) the need for adequate IT equipment. However, above all, the digital infrastructure of the country is priority in order to give high technological capacity to all private and public entities operating in the fields of economic and training activities. The *internal areas*, also by virtue of the almost natural isolation that its orographic conformation implies, seem to be less affected by the diffusion of Covid-19. As of today, an indicator for the identification of internal areas must necessarily be of a telematics nature (band, fibre, jig). In fact, these are immense territories often endowed with vast unused real estate assets. If properly infrastructured, they lend themselves well to absorbing urban housing densities without being affected by the effects of periphery while still favouring the monitoring of health, training and soil protection. The potential benefits of owning the workplace in a peripheral and / or rural area are already known: higher levels of well-being and lower perceived stress levels, absence of urban congestion, traffic and pollution, etc.

6. Adaptability and flexibility

Adaptability and flexibility of houses and offices are necessary in order to respond to different needs that may arise over time and have always been themes that have remained in the background of disciplines such as architecture and urban planning but which today are of particular importance.

We need to design urban and domestic spaces capable of hosting different functions and roles over time. The city and the houses have a great *inertia*. Cities or buildings, designed on rigid functional schemes, are unable to adapt to changes. Even the private space will have to adapt[5]. New types of spaces become necessary which include personal environments adaptable to forced cohabitation or remote working. It will go from rethinking the traditional studio in a digital key, to forms of common service, such as *co-working* condominium spaces.

It is also necessary to think about the periodicity with which these types of phenomena are manifested, and will increasingly manifest themselves in the future. A solution is represented by *multifunctionality*, in analogy with spaces for the management of emergencies in the field of civil protection.

Take for instance the concept of *Urban Special Structures* (for example the *vertical gym* built in Caracas by Alfredo Brillembourg) for which in ordinary conditions such structures are places of worship, recreation or sport spaces; but in times of crisis the roof turns into a landing strip for rescue helicopters and the entire building becomes an emergency centre or a distribution point for basic necessities. It is about positioning these multifunctional structures in strategic points of the settlements, at an appropriate radius of distance from each other. Telework, which certainly does not eliminate the need for close contacts, would call for creative activities, hubs for innovative jobs, places for exchange and information. And all this could favour the return of residence. However, small non-impacting productions, research activities and laboratories could find space in the city. The different possible solutions apply to physical space so that they can affect specific aspects such as the organisation of settlements and people's living and working places, but also the urban environmental conditions.

7. If and how urban planning paradigms change

The health risk, which could be the key to the Third Millennium, seems to call into question, imposing its revision (Fig. 1, Tab. 1), the main disciplinary paradigms on which the desirable scenarios for the city and the territory are based (Fasolino, 2015).

[5] Italians' dissatisfaction with their homes is a widespread phenomenon (RUR, 2012).

In addition to zeroing out or minimising land use (EC, 2012), the key word for urban planning of our time is *green*. Particularly, *Green and blue infrastructures* (EC, 2007; Naumann et al., 2011; Meerow & Newell, 2017) represent a cross-cutting paradigm capable of providing multiple benefits (environmental, social and even economic) to the communities living there. In this sense, green infrastructure contributes to maintaining and increasing ecosystem services (EC, 2007). Green materials, plantations, green roofs, parks and forestations can only increase the environmental conditions of well-being and health. It is well documented how vegetation can consistently reduce pollution levels, through the absorption of carbon dioxide or fine particulate emissions (Jobbagy & Jackson, 2000; MEA, 2003; Lal, 2004; EC, 2012).

Social distancing could lead to reviewing the meaning of an urban indicator in which *building density* and population density substantially coincide, so much so that they are used almost indifferently. The building density must therefore be accompanied by an indicator of the *intensity of the presence of bodies*, a sort of degree of filling of urban containers.

Urban density remains an important paradigm for all the other aspects it brings with it. *Transit oriented development* (TOD) (Dittmar & Ohland, 2004; Knowles, 2012), with reference to the nodes of public transport, is also associated with density, among other things, as well as with the mixitè and the shortening of distances, to be used preferably on foot or by bicycle, thus promoting individual and sustainable movements.

In the reconstruction of social relations (Gehl, 1980; 2010), urban planning is required to rethink urban planning standards in terms of public physical spaces and intangible assets for access to public services and common goods and for carrying out collective experiences fostering community solidarity and training courses.

It is necessary to study the repercussions produced by the changes that occurred in the main dimensions of daily life, with significant effects for residential and work environments (diffusion of collaborative consumption, *co-housing* practices and the use of spaces and networks for sharing).

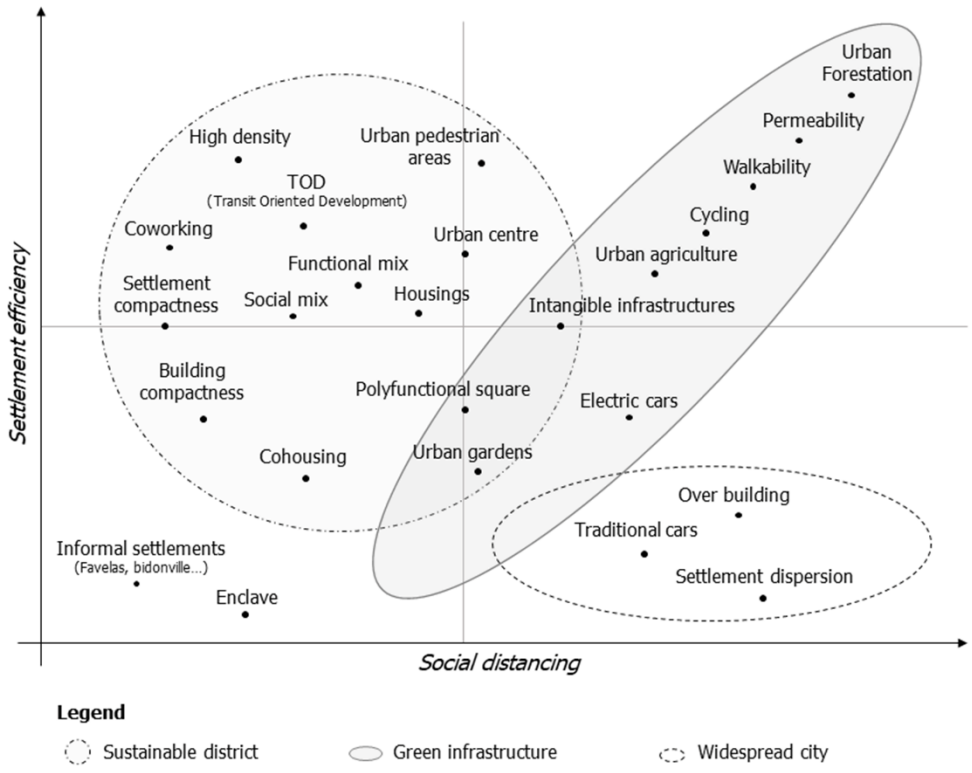

Fig.1 Social distancing and settlement efficiency

The behaviour protocols, to be applied more or less forcefully in certain periods, may distort functions and use value. Roads, gardens, parks, schools, stadiums, theatres, all public or public spaces, in addition to all other safety requirements (Fasolino et al., 2018), must guarantee the distance between individuals. A different public space will need to be envisioned, one which is more flexible, more introvert and completely rethought considering its more moderate density use.

Perhaps the *third places* (theorised by the sociologist Ray Oldenburg) namely private spaces with some public characters will increase. *Third spaces* are located in an intermediate area between home and work: bars, meeting places, pubs, social centres and these would bring together small self-selected communities.

In the time of Covid-19, cities are deserted ghost towns. Cities, on the contrary, are beautiful if you live them filled with life, if you hear the sound of words and the noise of encounters. One wonders then, what happens to the *city effect*?

The density of connections is the most precious value of the city, but public space is the first to succumb to the virus, which propagates precisely in the multiplication of encounters. Classrooms, places of entertainment and squares are symbols of life that are transformed into places of contamination. Furthermore, since in an emergency some activities (bars, restaurants, etc.) need more spaces outside the buildings, it is clear that in the future there will be a need for more public spaces.

Element	Paradigm	Principles / Criteria	Actions / Tools / Techniques	Healthcare emergency
Soil	• no to soil consumption	• Ecosystem services (ESs) • soil protection (danger/risks) • territorial security (hydrogeological/ seismic)	• avoid soil consumption • control of soil consumption (shape, fragmentation, jagging, barrier effect, etc.).	The soil saved provides ecosystem services including those related to people's well-being and health.
Density	• high building density	• Transit oriented development (TOD) • reduction of routes O-D • compactness ratio (S/V)	• densification at public transport hubs • targeted urban regeneration • building replacement with premium • management and transfer of building credits	Building densification is balanced by an increase in per capita surface area allocation. Disconnect the concept of building density from the intensity of presence of people in the built spaces.
Mixitè	• functional mix • social mix	• reducing the risks of single-functionality of neighbourhoods and settlements • reduction of risks related to lack of social cohesion	• involve multiple functions • avoid the concentration of people of the same social class • social housing	Mixitè is not synonymous of high population density and can be pursued even at a low intensity for activities present in any given place.
Green	• Green infrastructure • Eco-system services (ESs) • Nature based solutions (NBS)	• Establishment/extension of protected areas • territorial and urban biodiversity • implementation/extension of ecological networks • social / urban gardens • multifunctionality in agriculture	• plantings / forestation • multifunctional urban greenery (arboreal, shrubby, hedges) • permeabilization • eco-compensation • renaturation of compromised sites	Vegetable and forest open spaces favour air quality and environmental conditions of well-being and health. Large parks and green areas encourage physical activities with adequate possibilities for social distancing.
Mobility	• accessibility	• slow mobility	• urban pedestrian areas	The slow individual movement modes of

	• sustainable mobility	• local public transport • rail transport	• restricted traffic areas • 30 km/h zones • cycle paths • bike sharing • electric cars • car sharing	transport (pedestrian and bicycle) are consistent with the need for social distancing and the improvement of people's health and wellbeing.
Urban endowments	• Innovative urban planning standards	• standard for new needs • performance standards • infrastructure for intangible communications	• social housing • equipped green spaces • broadband / fibre optics • waste collection facilities / ecological islands • spaces for emergency management	The strengthening of the infrastructure for intangible communications allows remote activities especially in the most critical phases of the emergency.
Energy	• energy saving • renewable resources	• energy efficiency • renewable energy production • heat island effect reduction	• orientation / S / V ratio • reflective urban materials • stretches of water • green roofs / green walls • micro energy generation (photovoltaic, solar thermal, geothermal, composting, micro-wind, etc.). • rainwater recovery • district heating	Some devices are irrelevant with respect to critical health issues (panels, green roofs, etc.). Some devices are favourable to create conditions of well-being (heat island reduction).
Resilience	• social resilience • institutional resilience • urban resilience	• empowerment • tangible and intangible infrastructure	• participation / training • functional mixitè • social mix • mitigation measures • adaptive measures	Making the settled community more aware of natural and man-made risks and equipping it with the infrastructure to cope with them, in recovery and ordinary circumstances.

Tab.1 Urban planning paradigm, emergency proof principles and actions

The functional and social *mixitè* remains a value to pursue, even at low intensity. A principle that remains current is that of avoiding strictly homogeneous social islands, which can easily lead to marginalisation because they are unable to gather mixed composition nuclei which is the only way to favour a culturally complex system. The primary functions of a neighbourhood must ensure the presence of people who populate the streets at different times and who, while frequenting the area for different reasons, have the opportunity to use many of its shared facilities (Jacobs, 1961). In a health emergency the public transport service will have a reduced capacity allowed for each vehicle. It is difficult to increase the number of vehicles, given the chronic economic deficit of municipal transport companies leading to the risk of a more widespread use of *private cars*. *Car sharing* or *car-pooling* could further develop, but the strategic line of public transport would still be downsized in favour of a private solution.

The recommendations of the World Health Organization (WHO) call for an increase in the use of bicycles in cities, both because it allows social distancing to be maintained, and because exercise improves health and makes people less vulnerable to the virus. In addition, bicycle use can make a major contribution to limiting air pollution and, particularly for journeys of less than 5 km, which account for two thirds of urban journeys, therefore the bicycle is much more efficient than the car.

However, there is no doubt that the incentive for pedestrian and bicycle mobility must be accompanied by an extraordinary bolstering, of the infrastructures connected to these two basic modes of transport and must be supported by suitable policies. We are already studying the models of Budapest, Bogota, Philadelphia, Minneapolis, Oakland, Vancouver, Calgary, Vienna, Mexico City, Berlin and London which, in this emergency phase, have decided to intervene in public mobility, enhancing cycling.
Cycle-pedestrian networks will have to connect the traffic generators and attractors: railway stations, interchange car parks, production, management and training centres, universities and hospitals.
Finally, it is necessary to verify how the requalification of open spaces can affect not only the supply of specialised places for social activities and the demand behaviour, but also the improvement of the capacity of reception, inclusion, coexistence and creativity of spaces in common as well as their propensity to reactivate community values.

8. Times and spaces of the city

In certain phases, the need to modulate the intensity of people leaving their homes leads to the need to find greater integration between the urban plan and the city time plan (Bonfiglioli, 1994). It is clear how the timetables of services of public interest condition the functioning of the city and the territory. It is something that concerns both individual and collective behaviour at the same time (Mareggi, 2000). In fact, public times are those of work, shops, schools, cinemas, transport. They make the collective life of the inhabitants as well as businesses possible. They have the role of regulating the appointments between people and affect the lifetimes of each of them.
Therefore, timetables are an intangible social construction. They are not physical, yet they exist to the extent that they project themselves into the urban space. In fact, they become effective only when the service opens in the urban place where it is located, in the building which is dedicated to it. In this sense, the times of the services are localised, organised around the service itself, which is necessary for its operation.
The timetable system of working, transport and schools is located in the city and, on a large scale, in the urban system of which the city is a node of material and immaterial flows. On a small scale, the urban planning of times aims to design a new architecture for the equipping of public spaces such as, for example, the safety of pedestrian paths for children and the elderly, but also the trade and revitalisation of peripheral neighbourhoods. The possibility of using the spaces of certain services of public interest for different functions throughout the day is often not considered useful or necessary or is not allowed. The mono-functionality of the spaces facilitates management but represents a waste of resources and satisfies only a part of the possible users. The temporal continuity in the use of public spaces and equipment, in addition to meeting criteria of efficiency, makes it possible to modulate the presence of people during the day or the days of the week.
For the future, we imagine a scenario of mobility, regulated by shifts, no rush hours, no concentrated holidays and weekends, with more spread out working and rest hours. We are heading towards a city that never sleeps and towards a use of time to extend space. The dilution in time of people on the move, and of their presence in the spaces, in light of the emergency, assumes an even more important role than it already has in the organisation of the life of a city in ordinary conditions.

9. Resources

For the organisational revitalisation of the country, it will be necessary to finance structures and infrastructures in the health, education and social cohesion sectors, such as health and socio-health equipment, parks, schools, sports facilities, public offices and social housing.

The European context will need to include investment in unprecedented public policies. The new EU 2021-2027 programming will help to plan the relaunch through green interventions capable of providing immediate responses, but also to pave the way for a more resilient and supportive economy and society.
Economic resources will have to be diversified in forms and sources: EU funds and funds for the implementation of the Agenda 2030 SDGs, can be channelled into urban regeneration, favouring innovative public urban allocations, traditional channels related to construction activities (urbanisation charges, conventions, equalisation, compensation), charges applicable to new economies or deriving from the resulting benefits (green economy) and public-private partnerships. In addition to pedestrian and bicycle paths, urbanisation charges will have to be used to bring fibre optic, or at least broadband, to the areas which still have no coverage. The calamities of recent years have been answered almost always by resorting to emergency solutions. Also in this case, it will be necessary to seize this great opportunity offered by the crisis and to plan prevention on an urban scale.

10. Utopia

In urban planning, the value of utopia (Choay, 1965) is based on the experiments of industrial communities, who are bearers of development promises in an original social and settlement context. There is no shortage of references to hygienist utopias also in literature. In *Les 500 millions de la Bégum* (Verne, 1879), the two cities of France-Ville and Stahlstadt represent, respectively, an example of utopia and dystopia in urban planning and architecture (Sica, 1981).
What has happened, with hundreds of thousands of deaths and billions of people segregated at home, in ghost towns, will not pass by without leaving a mark on history. There is now a need for lucid thinking and a forward thinking, primarily in terms of politics, adequately supported by scientists, who can imagine and design the cities of tomorrow (Hall, 1996).
Will the world be globalised as before or will travel and exchange difficulties generate the need to rediscover a local dimension? The local is the dimension in which the network of social and human experiences has always taken root and opens up to the outside. Life will tend to be structured in neighbourhoods that must have all the functions, including those which have been expelled by local communities for years.
The *post-pandemic city* will be green and digital. New parks and gardens will be created in dozens of uncultivated public areas with no designated use. Small areas of therapeutic forests will be created in urban parks. Green will no longer be used only as urban furniture but as a real infrastructure.
According to the latest UN estimates, 1.8 billion people today have no home or manage inadequate housing, with very small spaces, without water and without electricity. By ensuring these people adequate housing with sufficient hygiene conditions, states not only protect their lives, but those of the entire global population, contributing to the containment of infection. It is unthinkable, in fact, to ask such people to stay at home without adequate interventions. This crisis is only exacerbating a condition that is already unworthy.

11. Knowledge and participation

History is full of events that see thousands of people occupying public spaces for various reasons, of celebration or protest. «Accustomed, as we are, to thinking that changes take place online or on a globalised scale, we do not realise that they are made of human bodies in urban spaces and that the mere presence in the square of people claiming their right to the city is a political fact of an explosive nature» (La Cecla, 2014), as happened to date for springs and struggle against regimes.
Looking to the future, the issues of aggregation, but also of social control, must be reconsidered. One wonders, for example, about the consequences of the *data urbanism*, which wants to regulate the development of urban

life with the control of private data. It will involve developing models and applications based on the *Urban Intelligence* project, which makes it possible to work on knowledge, scenario building and resilience management in the post-event. *Urban Intelligence* in turn makes use of the *Digital Twin Model*, capable of virtually reproducing the cities and parts of cities that are being studied.

In general, there is reasoning of novelties and changes in all sectors and in all the activities they have lived up to now based on the pillar of meetings and live interaction. The change that will affect citizens' participation practices and processes is destined to be profound, also with respect to the places of participation and sociability.

On the other hand, a transition from traditional tools, entrusted to social listening and direct involvement, to innovative tools entrusted to digital platforms, *smart communities* and *open data systems* was already underway. This applies, therefore, also to the practices of the local government participation.

Hence, an increase in the experimentation of forms of networking and remote public consultation on plans and projects can be expected. This reflection will focus on how to combine the advantages of direct dialogue with communities with the limits of digital techniques for involvement and dissemination of knowledge. This must be done in the awareness of having to proceed with progressive adjustments and the need for an assessment of the statistical risks present in the expansion of online procedures.

Participation, *governance* and *e-democracy* are even more, if possible, keywords to designate the possibility of citizens co-building public actions relevant for the future of their city and their associated life. These complements and deepen the classic tools of public debate and the political choices that give rise to political representations.

Scientific research and planning as well as public health decision-making are often criticised for relying almost exclusively on scientific and professional competence. However, it is necessary to reaffirm that this condition represents a strength and that skills must be strengthened and recognised. At the same time, new ways to extend the audience of those involved in the decision-making processes must always be hypothesised and tested. Finally, digital infrastructures and tools may also be entrusted with the task of compensating for the effects on democracy that could occur, in certain circumstances, due to the forced thinning of public spaces.

12. Final considerations and perspectives

The path towards a return to normality can represent an important moment in which to reflect on the relationships between scientific sectors and on the effects that these interrelationships can have on the social structure.

Urban planning is faced with a twofold challenge which, while on the one hand requires the mobilisation of intellectual resources in order to carry out an in depth analysis of the radical changes that will take place in the near future, on the other hand, it needs the creation of a finally comprehensive disciplinary framework, which is consistent and long-term.

The pandemic itself is a complex phenomenon, which requires the integration of medical and environmental sciences, urban sociology, psychology, urban planning and architecture, in order to gain systemic operational skills which are capable of dealing with complexity through a multidisciplinary approach.

It is also essential to adopt a resilient approach by addressing the crisis as an opportunity to improve global and urban governance, leveraging a new awareness. «COVID-19 has magnified the deficiencies of how we manage our cities but has also given us a unique chance to rethink, replan, and redesign. However, the question remains: will we heed these lessons? When the alternative is empty streets, quarantined urban dwellers, locked-down cities, a stalled economy, and most devastatingly of all, the loss of life, I argue we can no longer afford not to» (Acuto, 2020).

Predicting disasters is certainly difficult, if not impossible, but planning the development of the city with the margins necessary to contain the damage from recurring emergencies must be part of ordinary tasks. Urban planning is the discipline on which the responsibility for developing interpretative models capable of measuring the complexity and uncertainty of changes and proposing solutions for human settlement systems falls. It can perform this task as the cardinal principles on which it is based also respond to the needs of managing traumatic health emergencies.

Urban planning can unexpectedly claim a decisive role, contributing to the definition of the right distance between the threats of promiscuity and the opportunities that are hidden behind physical and relational proximity. To fully carry out this mediation task, the planning culture needs a renewed ability to propose long-term scenarios and visions. What we think today and, above all, what we do can change the cities of tomorrow, making them safer, more inclusive and more resilient in facing future crises.

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Image Sources

Fig.1: Elaboration by authors.

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