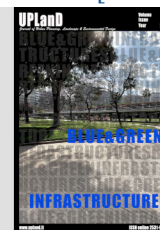


# UPLanD

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## BUILDING BACK BETTER RESILIENT PUBLIC SPACES

### WHAT THE COVID-19 PANDEMIC CHANGED IN URBAN PLANNING AND DESIGN

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#### HIGHLIGHTS

- Linking multi-risk approach and urban resilience to cope with possible future disruptions.
  - Background analysis of the past and current regulations at the international, national and local level.
  - Tracing urgent design topics that emerged during the first phase of the COVID-19 outbreak through a selection of worldwide actions and strategies that succeeded in reactivating urban spaces and infrastructures for public use in the framework of site-specific health emergency regulations.
  - Re-thinking approaches and challenges that can influence policies and decision-making processes in the framework of urban planning and design.
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#### ABSTRACT

The aim of the paper is to point out the role of resilient public spaces in ensuring public health and safety in the time of pandemic and in multi-risk scenarios. The investigation of urban strategies – that guarantee accessibility and flexibility of public spaces – is framed in opposition to the policies of closure and forbiddance of use which have largely been applied during the COVID-19 pandemic in the years 2020-2022, especially in Italy. Through a review of current policies on the topic of multi-risk exposure and emergency management at the global, European, national, and local level (with the case of the Campania Region, in South Italy), the paper underlines the weaknesses of urban planning and design instances in emergency decision-making processes. A selection of initiatives that experimented new spatial uses and configurations of public spaces is used to reflect on how recent practices reacted to the pandemic, as an alternative to restrictive, non-resilient approaches. The results are discussed and interpreted as relevant components to build back better, reinterpreting the role of public spaces towards an innovative research agenda for more sustainable and resilient planning and design.

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## 1. INTRODUCTION

This paper aims to be part of the existing and recent dialogue around the consequences of the COVID-19 pandemic – understood as “a disruption that will re-occur in similar ways in the future” (Ibert et al., 2022, p.2) – in the field of urban planning and design, especially regarding the design and management of networks of public spaces. It is well known that, since the beginning of 2020, with the spread of the pandemic worldwide, governments of different countries applied multiple strategies to cope with this disruptive event, such as social distancing, and smart working, very often allowing people only to go out for strictly essential activities. These policies and regulations influenced people’s behaviours in respect to their use of public spaces (Zandieh et al., 2020) both in terms of frequency and in quality, and therefore having consequences on mental and physical health, especially for the period related with the more severe spread of the virus. Research demonstrated the existence of spatial inequalities related to the spread of the COVID-19 pandemic by stressing how certain spatial-related dimensions in metropolitan areas have been affecting the diffusion of the COVID-19 infection. Thus, socio-economic features of the territory have been associated with the geographical spread of the virus (Almendra et al., 2021) such as the density of urban areas, defined by a high concentration of residential blocks, shopping facilities, and the usage of public transportations (Li et al., 2020), in this way showing how the range of vulnerability differs socially and spatially (Ibert et al., 2022). The management of network of public spaces during the COVID-19 pandemic as in an emergency modality, demonstrated a lack of preparedness of citizens and institutions to effectively cope with such disruptive events. For instance, the definition of local “red zones” in Italy, and periods of lockdown all around the world, showed its limitations for the good functioning of urban daily activities and for the psychological and physical well-being of citizens. In this way, the pandemic has been seen just as “a singularity” (Ibert et al., 2022), and as the major problem to be solved to respond to medical necessities. Thus, it has not been considered in a systemic way, not reflecting on the importance for all to safely access public spaces as a “thirdspace” which is neither work-space or home (Soja, 1996), where spontaneous social interactions are allowed. In this perspective, the paper focus on uses

and role of places in the city more than on their ownership character, but refers to Bernardo Secchi beliefs that «[in the future] “public spaces of public ownership and management” will decrease, while “private owned and managed public spaces” will increase» (Secchi, 2000, p. 174 – authors transl.). What is clear and globally recognized is that the management of risks and disasters cannot be limited only to the management of the emergency – that is the phase on which many governments concentrated their efforts during the pandemic. Rather, it deals with everything that can avoid the disaster and allows communities to be prepared in emergency situations in case the disaster occurs (UNISDR, 2015). This means that a Build Back Better approach not only has the ambition to recover from a disruption but to do it in a twofold perspective: learning from what happened and being prepared, raising awareness, for future crises. With reference to the COVID-19 pandemic, we are witnessing the final stages of the emergency phase (during the writing process of this paper, in September 2022, the WHO Director-General Tedros Adhanom Ghebreyesus told reporters at a virtual press conference: “We are not there yet. But the end is in sight”). This creates the conditions to “learn lessons” from spontaneous and instant shifts in the way we experience collective spaces. The paper contributes to demonstrating how, globally as well as locally, public emergencies such as COVID-19 pandemic, could be seen as an opportunity to frame innovation in planning practice, design activities, and decision-making processes, with specific reference to the use of public spaces to improve sustainability and urban resilience. This makes it necessary to structurally rethink the network of public spaces, including public open spaces, as places for safely carrying out social practices and leisure activities. Moreover, the strategies and tools to face the emergency could go beyond the mere mapping of the performance of the existing spaces and move towards the transformation and regeneration of neglected public spaces: areas that could be activated through the development of long-term adaptation strategies. Thus, the main research question that this paper aims to answer is the following: *In opposition to the policies of closure and forbiddance of public use which have been applied till now in many densely populated territories, what are possible strategies of use of public spaces that ensure overall public health and safety in the time of pandemic?* This article answers the main research ques-

tion by framing the role that public spaces could play during the spread of diseases. Further, by addressing the restrictive policies applied during the COVID-19 pandemic, it attempts to shed light on the changes that should occur in planning and policies to ensure the right of accessibility and utilisation to these spaces, also during the hardest time of the pandemic. The paper considers both bottom-up and informal practices, and largely inclusive policies that involve a wide range of stakeholders who became the main actors in the reactivation of neighbourhood spaces. The paper is subdivided into sections with the following goals: (i) considering the political gap between COVID-19 management restrictions and public use access (Background); (ii) positioning the response to pandemic within the Disaster Risk Management (DRM) and global-to-local level frameworks (Materials); (iii) reviewing existing approaches referred to the study of good practices on an urban scale that emerged after the pandemic (Methods); (iv) contextualising international good practices in the framework of national and local policies (Discussion), and reinterpreting the role of public spaces and public uses, towards an innovative research agenda for more sustainable and resilient planning and policies (Conclusions). The paper looks at the global and national context to discuss general principles in the design of sustainable and resilient public spaces that meet the issues of the pandemic. The local scale refers to the territory of the Campania Region which is explored for deepening the understanding on how the overlapping of emergency restrictions at national and local level produced a complex framework of rules that led to public services closure and suspension of accessibility. The policy framework refers to a territory located in the south of Italy. It has been chosen as a focus area due to the presence of highly urbanized lands that are susceptible to environmental risks. As stated in the report on the contagion geographies in Italy (AAA-CATAP, 2021), it is possible to highlight a relationship between COVID-19 expansion and socio-ecological systems characteristics. In the areas reflecting a mix of socio-ecological factors with the maximum anthropic pressure, the risk exposure/susceptibility is higher. A good relationship between natural and urbanized components, the inclusion in ecological networks, specific microclimates and the presence of good quality people leisure times, have been pointed out as significant primary factors influencing the spread

of the virus in Italy (Malcevski et al., 2021). Reflecting on socio-ecological systems in the context of the Campania Region implies also to address the lack of accessibility to public spaces linked to the housing vulnerability, the lack of quality requirements, abandonment, and the reduced capacity of spaces to adapt to exceptional events. To provide elements for the discussion on how to intervene in these spaces, the paper analyses some practices, including new tools for socialising, for practising safely leisure outdoor activities, and making neighbourhood places accessible to all for the organisation of activities and services of support and solidarity between people. Public spaces analysed and included are: squares, parks and gardens, walkways and bike lanes, but also common goods, residual or abandoned public spaces, open spaces close to residential areas, zones of public use and facilities (schools, sport centres, cultural hubs, etc.). As the review of practices shows, all of them can provide more uses over time, beyond the intended functions, to accommodate new social practices and uses in a resilient city.

## 2. RETHINKING URBAN PLANNING AND DESIGN IN MULTI-RISK ENVIRONMENTS

Within dense and well-equipped urbanised areas, pandemics have brought new questions to the planning and design of cities, suggesting a complete rethinking of how to use, organise and improve the existing infrastructures. In fact, confronting the COVID-19 emergency with the global awareness of the scarcity and undermining of resources jeopardises sustainable measures that promote concentration and sharing of spaces and infrastructures to counteract waste, overconsumption and pollution.

The relation between pandemics and space is not a novelty (Duhl et al., 1999). Throughout history, in relation to the development of urban systems, infrastructures like sewer networks, hospitals, well-ventilated neighbourhoods, urban parks and waste disposal areas have been planned as a response, an urban antidote, to the spread of diseases. In the last decades, the relevance of urban planning and design in multi-risk management has represented a turning point where concepts as urban resilience and climate adaptation (Meerow et al., 2016; Willows & Connell, 2003) have point-



ed out that land use planning and urban design should be informed by the identification of risks including hazards, exposure and vulnerabilities. As a specific type of risk – a health disease – pandemics have been impacting the built environment with significant changes over time. These do not directly concern the material elements of our habitats, rather the main disruptions occur in primary human activities that take place in urbanised areas, thus affecting the sphere of uses more than the physical elements of the space. In fact, moving, working, socialising, purchasing food and goods, dwelling in healthy places, etc. are ordinary – almost mechanical – actions that raise risk parameters, and suddenly become the areas of attention of experts in several fields when a global outbreak occurs.

In the gap between dogmas of contemporary planning (dense cities, public transport, shared facilities) and what has been called *social distancing* (Jasiński, 2022) lies the need to rethink urban planning and design in a multi-risk perspective that includes the combination of pandemics with other hazard sources (Hariri-Ardebili, 2020). Although risk management protocols cover the issues related to the virus spreading, the spatial perspective of pandemics has not been examined in-depth until recently. This results in limited norms aimed at the use of protective equipment, sanitising procedures, and temporary reorganisation of services, as analysed in paragraph 4.1 from the global to the local level.

Before the COVID-19 pandemic hit in 2020, contemporary urban strategies developed a partial response to global challenges by addressing a multi-risk perspective that have prioritised DRR concerning climate change, anthropic hazards and nature protection (see the 2021 EU Adaptation Strategy and the EU Green Deal). As a consequence, COVID-19 challenges sustainable trajectories such as urban density and human-wildlife coadaptation allowing for reconsidering threats and opportunities of urban areas, and thus, refocusing urban planning and design strategies to *build back better* (Sharifi & Khavarian-Garmsir, 2020).

The purpose of rethinking public spaces with a multi-risk approach implies to tackle urban spaces and their transformation by taking into consideration the possible combination of hazardous events and the chain of cascade effects caused by multiple risks. This approach involves dealing with a high level of uncertainty – increased by the health disease risk – that are considered in the development

of scenarios through large data sets and objective frameworks. Nevertheless, these detailed quantitative analyses add complexities that could lead to an overwhelming number of potential scenarios which, in some cases, can be impossible to quantify (Komendantova et al., 2016). By confronting the recent protection measures with the adaptive spatial responses that emerged as a reaction to social and spatial constraints, the paper tries to provide insights and stimulate a discussion on the role of resilient spaces in multi-risk environment in the framework of urban planning and design.

### 3. BACKGROUND

This section aims to bring together the multi-risk approach and the role of resilient spaces as means to plan and design *better* in an era exposed to disasters and disruptions. On the one hand, it focuses on the systemic and multi-risk approach that call for an understanding of the responsibilities of the human society in worsening natural hazards-related disasters. Effects of governmental choices on the access of public spaces in state of emergency are highlighted. On the other hand, it underlines the relevance of public spaces in applying a resilient approach to urban environments.

#### 3.1 The human role within the systemic risks of our age

Changing circumstances of our times comprehend, among others, climate change and the expansion of urbanised and industrialised areas (involving in turn deforestation, intensive agriculture and farming, trade of wild animals, etc.). All these human-induced disaster risks are examples of the so-called “systemic risk”, in the sense of disaster risk with a potential cascading factor for triggering technical and societal disasters (UNDRR, 2019), that can lead to the collapse of the entire system.

The current geological era is mostly called Anthropocene, a well-known term coined some decades ago by the Nobel Prize for Chemistry Paul Crutzen and the biologist Eugene Storer, conceived as the age in which man is the main cause of all changes and challenges, from local to global scale (Crutzen, Storer, 2000).

In this perspective, the human being is at the cen-

tre of every action and is also deeply responsible for tampering the natural environment. The *Anthropos* is the cause and/or the disruptive factor of the intensification of the effects of all the most recent natural disasters. Other authors also refer to the overcoming of Anthropocene in a broader *posthuman* time (Posthuman Manifesto; Pepperell, 1995), involving all together non-human actors and technological media (Braidotti & Bignall, 2019).

Delaying in coping with these risks will lead to potential worsened conditions, putting at risk the human possibility to handle the impacts of its own actions (Djalante et al., 2020).

There is a serious chance that multiple events can happen simultaneously (e.g. natural disasters, but also pandemic, war, etc.), especially if referred to a pandemic catastrophe, which, by default, unfolds itself in several months/years, conceding time to other catastrophes to happen. This calls for the urgency for the global community to work to increase its natural inner resilience in facing disasters, through a risk-informed sustainable development (UNDRR, 2019).

Therefore, COVID-19 is undoubtedly a systemic risk and a product of our age (Trump et al., 2021). Nevertheless, it is relevant to state that, while systemic risks are usually dealt with along five phases in the Disaster Risk Management (DRM) cycle (prevention, preparedness, response, recovery, and *build back better*; UNISDR 2015), pandemics are not such a linear systemic risk (Fakhruddin et al., 2020).

The essentially non-linear nature of a pandemic is due to its overall cycle of following waves, where alert and first pandemic waves correspond to the response phase of DRM, while the recovery from the contagion is not to be seen as an ending phase. It is indeed a transition phase that needs to be properly addressed, because it can be followed by a new wave which can strike harder (or with different modalities) than the previous one. In this perspective, it is not possible to face the pandemic in itself as a whole, but adjustments in policies, decision-making processes, and related responses need to be accurately made along its overall course, in order to minimise consequent impacts (Yamori & Goltz, 2021). In this spiral-wise model, increasing sustainability can be then achieved whilst improving prevention conditions, reducing for example spatial and structural vulnerabilities, working on the resilience of local communities (RICS et al., 2009).

#### 3.2 What is left for humans in time of pandemics

The materialist concept of non-human life can be considered on the one hand “vulnerable”, as a “bare life” (Agamben, 1998) subject of *biopolitics* (Foucault, 1978) but also, on the other hand, vital and productive (Braidotti, 2019), in a proactive dimension of *affirmative ethics* (Braidotti & Bignall, 2019). In light of a pandemic, the first interpretation can be referred to political economy and governmental modalities, defining regulations with consequences on human bodies and human life itself, where public sector manages and regulates cities and spaces (Harvey, 2020) through convolute bureaucracy and strict regulations within an unhindered, long lasting “state of emergency and exception” (Agamben, 2020).

The pandemic has harshly hit on existing spatial vulnerabilities, compromising or deeply limiting and conditioning people's chances to freely use public spaces, even open spaces, within dense urban and metropolitan areas, in opposite directions with the necessity to sustain resilience, social interaction and collective skills among citizens. Furthermore, applying restrictions on public access in the contemporary capitalist model, has meant that the *homo economicus* could not produce any further capital as long as the sanitary emergency called for the social distancing and the abstinence from the use of public spaces (Davis, 2020).

The pandemic can be conceived as an occasion for innovation (as in the meaning of *disruption* by Bower & Christensen 1995) and an opportunity to amplify affirmative forces (Braidotti, 2015), e.g. an expanded paradigm of care, structurally acting on material and immaterial welfare, especially for vulnerable people. The “care” can be read through increased access to information technologies, through informal uses of spaces, promoting social inclusion and collective claim within the cities (Jon, 2020).

This last paradigm is the one that can be realistically perceived as acting on the culture of risk and prevention, at all levels. Affirmatively re-organizing the *not-only*-human networks of physical, cultural, organic and socio-ecological flows (Swynge-douw, 2006) can directly affect individual and collective behaviour and perception of everyday life. These networks and flows, as in the metabolic approach to sustainable development (Kennedy et al., 2007), are like living maps of non-linear connections, crossing cities and societies.

This model can be defined as “metabolism of care” (Amenta et al., 2020), acting on fragile communities and most exposed subjects, in all possible declinations: from children to the elderly, to minorities, to short term travellers during disaster events, etc. These people’s lives are inextricably linked to those of others, whose interrelations cannot be flattened from uncontrolled fear of contagion risks.

As in the biological metaphor on metabolism, the passage from a traditional model of disaster risk management to a “metabolism of care” can only include the integration of all the sectorial responses to natural disasters into systemic and long-range planning strategies, also suitable for pandemics. Then, the previously mentioned complex transition from a linear model of response to natural disasters to an integrated cycle of responses (Fakhrudin et al., 2020), is extremely useful to assert the role of individual and collective behaviours in changing the scale of impacts of following waves. The trust in the actions from resilient, risk-informed local communities is entangled in a model capable of elaborating long-range and systemic strategies, suitable for systemic risks and disasters, reconfiguring the way of living within cities.

### 3.3 Design and strategies for a wide usability of public spaces in a post-COVID resilient perspective

Public spaces are, by definition, freely accessible to all people (Zandieh et al., 2020). “All citizens, regardless of their role, are users of public space. All of them have the right to access and enjoy it in complete freedom, within the rules of civic coexistence” (UN Habitat 2013, p. 114). In fact, public spaces encourage social interaction (Soja, 1996), representing the most important infrastructure for contemporary cities and territories, being the places where different activities and dynamics of community life happen (Mareggi, 2020). Moreover, public space has the potential for improving mental health, welcoming recreational and physical activities, as well as social ones (Zandieh et al., 2020).

The need and right for all to have access to public spaces is also indicated in the Goal 11 of the Sustainable Development Goals of the United Nations (2015) which reads: “Make cities and human set-

tlements inclusive, safe, resilient and sustainable”, and in particular, the Target 11.7, which states: “By 2030, provide universal access to safe, inclusive and accessible, green and public spaces, in particular for women and children, older persons and persons with disabilities”.

Focusing on parks and urban green areas, it can be stated that they are also the privileged place for ecological and landscape reconnections – by valorising local spatial resources without further soil consumption – for green corridors welcoming human and wildlife, where their metabolic processes like the ones related to the water, air, waste and food cycles occur. They make available numerous ecosystem services which are helpful for enhancing health and thus the quality of life of all (Xie et al., 2020), contributing to creating strong relationships between citizens and the environment (Larcher et al., 2021). Studies highlight the beneficial role that urban parks could play in the time of pandemic as green buffer zones: even if, on the one hand outdoor activities could have the potential to increase the risk of infection, on the other hand, people should be encouraged to visit urban parks – even during a pandemic – since long-term isolation may bring about more health problems (Xie et al. 2020, p.12).

Furthermore, networks of green areas – green infrastructures – have proved themselves essential during pandemic to support wellbeing. Recent studies on pandemic times have been showing that the mere presence of public spaces and services in cities is not sufficient for ensuring a good quality of life, being crucial instead their usability and their functioning (Mell & Whitten, 2021).

One of the emerging themes on which it is urgent to focus has been lately the importance of ensuring a wider usability of public spaces preserving human safety and health, but also wellbeing, with a focus on their resilience; the latter can be understood as flexibility and adaptability of utilisation of public spaces in different and risky situations. In fact, research studies demonstrate that flourishing and well-functioning public spaces are the ones which are adaptive over time to changing circumstances (Carmona 2019; Zandieh et al., 2020), thanks to their robust design “simple, uncluttered and with resilient natural materials” (Carmona 2019, pp. 56-57).

In this framework, urban sustainable regeneration, and recycling of neglected urban areas – which are not functioning well and for which there is no design solution yet – can be a necessity and

a new perspective for gaining new opportunities of public use (Gabellini, 2018). Future strategies can also be oriented towards reuse strategies and recycling designs, temporary and flexible uses, in wide networks of public infrastructures, as well as through tactical urbanism and bottom-up actions, as possible ways to implement a long term, adaptive and robust vision for new potential networks of safe and robust public (open) spaces.

## 4. MATERIALS AND METHODS

This section investigates responses to COVID-19 on a background analysis of the past and current regulations at the international level, and on spatial interventions as an immediate reaction of adaptive societies. By adopting a qualitative comparison on an international policies overview on the topic of multi-risk exposure, pandemics and emergency management, this study draws on the principles of adaptation and disaster resilience to achieve planning efficiency and effectiveness with a particular focus on public and collective spaces. Evidence suggests that the general responses to COVID-19 passively failed the Sendai Framework’s call for building resilience against all hazards – including the biological one – as they missed actions to effectively intersect health and disaster risk management (Djalante et al., 2020). The goal is to build a conceptual framework that could enable the comparison of policies carried out by international and national governments, by highlighting how these approaches and challenges can influence not only policies and decision-making processes, but also urban planning and design issues at the local scale especially in terms of use, accessibility and distribution of users. The research methodology, in relation to the use of public spaces and services during pandemics, focuses on: i) an overview of the recent policies in the European context, also with reference to regulations at the international level to explore to what extent emergency plans include pandemic issues (4.1.a); ii) the challenges faced by Italy and by the local regional level of the Campania Region, on the topic of multi-risk exposure and emergency management (4.1.b-c); iii) a selection of international strategies and practices that highlights how recent uses and design of public spaces have been implement-

ed as a rapid reaction to the pandemics. The collection of practices, responding to multi-risk exposure, follows thematic categories that merge similar approaches and spaces (4.2.a-d). The exploration of successful spatial responses allows for questioning the restrictive approaches adopted by Italy, and the Campania Region in particular, and thus to create a context for further reflections on a comprehensive DRM approach that can have positive impacts on local urban policies, also improving disaster resilience.

### 4.1 Materials. From global to local DRM mainstreaming and disaster resilience

#### a. Preparedness at the International and European Union level

Since the ‘90s and especially after the outbreak of the SARS epidemic, the World Health Organization WHO asks the member states to promptly provide information on potential epidemics, in order to draw up risk prevention and emergency management guidelines corresponding to global scenarios (WHO, 2016). Furthermore, in 2019 WHO adopted the Thematic Platform on Health Emergency and Disaster Risk Management, remarkably intersecting health and disaster risk management. It refers to the “systematic analysis and management of health risks, posed by emergencies and disasters, through a combination of (1) hazard and vulnerability reduction to prevent and mitigate risks, (2) preparedness, (3) response and (4) recovery measures” (WHO, 2019). Nevertheless, this fruitful combination did not reflect in WHO first technical guidelines (WHO, 2020).

At the spread of COVID-19, the United Nations Office for Disaster Risk Reduction (UNDRR) responded in a broader all-hazard perspective, with a specific reference to the Sendai framework focus on disaster response as a combination of preparedness and prevention (UNISDR, 2015). In particular, the UN Secretary-General asked the international community to focus also on the one hand on the social impact and the economic response, on the other hand on recovering/building back better. A specific attention is paid to the Target ‘E’ of the Sendai Framework (2015-2030) related to disaster risk reduction strategies, where development planning and programming needs to be properly conveyed from national to local level and vice versa.



Beyond the Sendai Framework, biological hazards were identified as major risks for the 21st century within the Global Risk Assessment Report (GAR) of 2019, that referred to the concept of pandemics as “systemic risks”. That is why GAR also stressed the relevance of informed action within and across sectors, including all types of decision makers at local, national, regional and global levels to improve systemic risk management approaches at all spatial and temporal scales. This management is based on the emerging thinking framework where pandemics are not conceived as crises to respond to, but more as distinct outbursts within integrated cycles of preparation, response and recovery/build back better (Bedford et al., 2019).

Sendai Framework objectives have been implemented in the EU in a fragmented way through different policies and member states initiatives (EC, 2016), without a wide-ranging risk-informed approach of emerging thinking. Nevertheless, the European Commission support for the Sendai Framework identifies health as interlinked with Disaster Risk Reduction (DRR).

At first the EU response to COVID-19 had the chance to integrate actions through the Integrated Political Crisis Response (IPCR) (Djalante et al., 2020), that already pre-existed with functions of monitoring and information-sharing on natural or man-made cross-sectorial disasters, as well as acts of terrorism. Then, in late 2020 the European Commission published the Overview of Natural and Man-made Disaster Risks the European Union May Face, in line with the Union Civil Protection legislation as a cross-sectorial overview of risks in the EU. The Union Civil Protection is the proper body to enhance disasters' preparedness and facilitate a rapid and efficient response. To ensure a better response to COVID-19, a new legislation was launched in May 2021, providing the EU with additional competences to locally and globally respond to all risks.

During last decades, the European Commission implemented on the one hand risk management in legislative instruments; on the other hand, it provided ad hoc assessments of risks caused by serious cross-border threats of environmental origin through the Health Security Committee, also in combination with Member States actions. Furthermore, the EC, together with funding organisations from other countries, has established the Global Research Collaboration for Infectious Disease Preparedness (GloPID-R) and funded research on Emerging Epidemics under the Seventh Frame-

work Programme for Research and Development (FP7) and Horizon 2020 (H2020). All these actions went into the direction of a mainstreaming of disaster risk management within policies, covering several fields of knowledge and action.

A specific focus of response strategies involves climate change as a common ground for multi-risk approach and related EU policies. Specifically, with regards to climate change adaptation and risk prevention and management from the European Structural and Investment Funds in the 2014-2020 period, investments involved the development and implementation of: ecosystem-based solutions, disaster-resilience improvement in local communities, and climate-proofing of public infrastructures.

Furthermore, the European Green Deal and the first European Climate Law (2021) are based on the EU Adaptation Strategy (2021), expecting a resilient, adapted and climate-neutral Europe by 2050.

#### *b. Pandemic reaction at national level in Italy*

Worldwide, Italy has been one of the most affected countries during the COVID-19 pandemic, both in terms of infections and deaths also due to an initial lack of regulation and testing, particularly during the first wave of 2020 (Djalante et al., 2020; Barbarossa, 2020). The evidence of Italian regulations suggest that the reaction has been finalised to a mechanism of one-to-one correspondence to the disaster while it was occurring, meaning gradually adapting to its severity or removing restrictions in case of decreasing. No long term, comprehensive strategies have been developed to improve disaster-resilience and live “with” the risk so far, but just ad hoc arrangements to stimulate and support existing economical activities.

On 31<sup>st</sup> January 2020 Italian Prime Minister Giuseppe Conte declared the state of emergency due to the spread of COVID-19 and on March 9, 2020 he signed the first Prime Minister Decree containing measures for the containment and contrast of the spread of the virus throughout the whole national territory. It stated that any form of gathering of people in public places or places open to the public was then prohibited, mobility had to be justified with self-declaration of essential needs (for health, work, or extreme necessity). Until May and then June 2020, the whole nation remained in a state of substantial closure of main public activities; this was followed by a gradual re-opening of all of them during summer and the abrogation

of all the restricting measures, except for some basic precautionary ones to contrast and contain the diffusion of the virus, i.e. the use of masks in crowded areas.

In May, the Government emanated The Decree for the Relaunch of activities (Decree of 19 May 2020, n. 34, then law n.77 of 17 July 2020) providing: economic incentives for sustainable mobility in favour of citizens (e.g. to buy bikes, e-bikes and micro-mobility) and to build cycling lanes in existing urban roads; resources for the equipment of schools for the use of teaching methods compatible with the emergency situation (social distancing of students, remote teaching, etc.). Beyond that, it facilitated the procedure to temporarily use open public spaces for leisure time activities, especially dehors for commercial use and touristic enterprises.

In the late summer-autumn of 2020, due to the second national wave of the pandemics, the Prime Minister Decree of 18 October and 24 October allowed Mayors to define the closure of public places like streets and squares in urban centres. Schools and universities (based on the epidemiological situation of the local territory) were required to organise distance learning activities. November and December 2020 were accompanied by stricter regulations that substantially aimed at avoiding mobility – other than for essential purposes –, gatherings in public places and then in private homes during the festive season. Regions were marked as “zones” and differentiated by colours: white, yellow, orange, red, defining incremental restrictions.

During 2020 and 2021, the state of emergency, which gives extraordinary power to the Italian central Government and to Civil Protection, and that has been firstly introduced on 31<sup>st</sup> January 2020, has been gradually extended.

The year 2021 opened with a change in the lead of the Italian Government but with no substantial changes in the restrictions that affect above all leisure activities and nightlife, mobility between regions and education in schools and universities. Stricter rules were defined for red zones. In the meantime, people started to participate in the vaccination campaign (symbolically started on 27<sup>th</sup> December 2020), but worldwide vaccination coverage is still too low to prevent the development and spread of COVID-19 variant (so called “Delta”), which started a third wave of the pandemics in Italy too. In May, the Decree for the Support of activities (Decree of 25 May 2021, n.73) provided new

economic resources for sustainable mobility, to correlate with the study of home-work and home-school patterns and trends, and for the equipment of schools for the use of safe teaching methods.

The third wave seemed to run out towards the beginning of the summer, also for the combination with the increase of vaccines. This led to the softening of national restrictions, even basic ones like the use of masks when in public open spaces, while introducing mandatory vaccination for some categories (health-vulnerable groups and people over 60) and the use of “COVID vaccination certificates” or “COVID negative tested certificates” to take part in most of public life activities (indoor or outdoor crowded events, about work and also leisure time and education).

This condition of relative calmness entered a crisis in November 2021, with the arrival of a new highly contagious variant (so called “Omicron”). The Italian Government proceeded to re-introduce basic restrictions, coloured zones, while giving more freedom to fully vaccinated people over people negatively tested, but not yet fully or at all vaccinated.

The year 2022 has been characterised by a gradual removal of restrictions (this paper has been closed on October 2022), due to the concurrent higher rates of vaccinations. More than 90% of the population have been vaccinated with almost one dose and more than 80% with almost two doses in Italy. On 31<sup>st</sup> March 2022, the Italian Government ended the state of emergency.

#### *c. The case of the Campania Region*

This paragraph summarises the main Ordinances of the Campania Region in response to moments of “turning point” of the legislation at national level or with regard to more restrictive instructions. In particular, the topics of interest for this research refer to: mobility, leisure, education, with a specific focus on the usability and restrictions of the use of public open spaces.

Generally, the Ordinances had the scope to further contain social activities in consideration of specific epidemiological data on death and infections and/or collective behaviours on contagion risk, recognised within the Region. In May 2020, while the national level proposed a gradual reopening of activities, the Regional Authority defined the chance for the local Municipalities to close public streets and squares in order to contain contagion risk, with a specific attention on containment measures of outdoor sport activities in public parks and



streets and nightlife in commercial areas (Fig. 1). Stricter restrictions were also applied during the autumn of 2020, which was also the first time that Campania Region started being severely hit by the virus. Education activities for all schools and universities had to be performed only online (with the exception of kindergarten and first classes of elementary schools that could perform activities in person in a second phase); mobility could happen only within the boundaries of municipality of residence, or with self-declaration of essential needs (for health, work, or extreme necessity); and outdoor sports activities were limited to specific hours in public parks and streets. A specific attention was given to the Christmas holidays of 2020 with further restrictions on all outdoor activities (again with the possibility of closing streets and squares where social distancing could not be guaranteed) and on mobility. During winter and spring of 2021, the education activities remained substantially online, even with a period of extension of the suspension to kindergartens and elementary schools. In November 2021, the closures of schools of the winter 2020 were declared “illegitimate” by the Regional Administrative Tribunal (TAR) of Campania, after

the legal appeal presented by a group of parents and by Codacons Campania (the association that preserves the rights of consumers). In the opinion of the TAR Campania, the suspension of teaching activities in presence, in a generalised manner, did not take into account the regulation for zones of risk contained in the national legislation, that had the aim to preserve a balance between the right to health and the right to education, in the sense of sacrificing the second to the first only in cases of greater risk (red zones). The restrictions became severer in March-April 2021 (also for the Easter holidays), with the Ordinances defining closure of urban parks, municipal villas, public gardens, promenades and squares, etc. With the arrival of the summer there was a local and gradual softening of restrictions, except for those concerning the use of facial masks (they remained mandatory for the Campania Region, while the national level defined to use them only for indoors activities) and specific restrictions concerning outdoor nightlife in commercial areas, prolonged from time to time to avoid contagion risks and to Christmas holidays of 2021, parallel to the awakening of a fourth phase of the pandemic spread.



**Figure 1:** Social Distancing with outdoor facial masks in Capodimonte Park in Naples.  
Source: Anna Attademo ph. (2020)

As in the national level, the year 2022 has been characterised by a general removal of restrictions in Campania too, with some remaining precautions on recommending the use of facial masks in potentially dangerous circumstances (e.g. public transports system).

#### 4.2 Methods. How urban planning and design respond to COVID-19: some practices to reflect upon

Although COVID-19 restrictions disrupted the collective nature of public transports and facilities, and altered the human-space relationships in the private realm (shared houses, apartment buildings, dense neighbourhoods, and workplaces), in favourable contexts, these restrictions fostered the adaptivity and resilience of urban spaces offering a wide range of experiences to reflect upon. The reaction of city users in creatively rethinking urban spaces in emergency conditions is a valuable contribution of the lessons imposed by the pandemic. Therefore, a critical reflection on urban planning and design responses appears to be crucial to bring the multi-risk approach into the spatial disciplines that aim to develop resilient and adaptive cities.

This paragraph aims at tracing urgent design topics that emerged during the first phase of the COVID-19 outbreak. By applying an inductive research approach, the selected topics arose from the observation of worldwide actions and strategies that succeeded in reactivating urban spaces and infrastructures for public use in the framework of site-specific health emergency regulations. Differently from former pandemics, the current speed of information and the wealthy conditions of the affected countries provided an easy circulation of *best practices* and ideas on the topic.

To understand how cities all around the world responded to the threats posed by COVID-19, this research proposes to address important themes – related to mobility, leisure, and use of public spaces – by bringing observations of strategies and practices to the discussion table. As a first step, it seems important to look at what have been implemented in the last two years by different city users such as municipal administrations, professionals, associations and individuals. These clusters of actions/projects have been systematized into thematic groups to facilitate their reading and

understanding. The following descriptive sections allow us to critically put these experimental interventions in relation to emergency policies and to reflect on how cities reacted to the pandemic. Eventually, they can offer insights on how urban planning and design can shape the preparedness of cities for facing future health-related disruptions.

##### a. Distance devices and drawings for green and open spaces

Some transformations have changed the appearance of spaces to guarantee the safe use of green and open spaces. A very immediate response of citizens and designers has been, for instance, the creation of portable distance devices and temporary painted drawings on the ground to allow people to still benefit from open air facilities.

Portable furnitures as the pic-nic blanket “Here Comes the Sun” by Paul Cocksedge or the two-stools plywood bench “CoronaCrisisKruk” by Object Studio became an example of how design could translate the principle of keeping the distance into objects that contribute to maintaining a safe use of outdoor spaces.

The same purpose was carried out by the drawing of social distance circles applied as a safety solution in public parks. Following the example of the Domino Park in New York, also other green areas such as Brooklyn Park and San Francisco's Dolores Park in the USA and Havneparken in Copenhagen have applied the same principle of drawing circles, squares or hearts on the grass allowing people to occupy a specific area geometrically bounded and distanced from the others.

Painting patterns or placing stickers on public grounds have also been applied as a method to define waiting areas by drawing queues on floors. This became an easy tool that allowed public services, especially provided by airline and retail companies, to manage their activities with safe conditions for workers and customers.

The approach to think of open spaces in terms of “safe perimeters” led to tackling how activities in the public space can be informed by the design of the ground or also how rules of social distancing can become a design guideline. In this sense, an interesting proposal has been developed by the British studio Dn&co which imagined dividing Parliament square in London through an organic grid used in combination with an app for mobile phones that would guide the user to occupy a



unit of the grid while keeping the safety distance. With a similar logic, the studio Accept & Proceed designed the “Keep Your Distance” football field where each player has an individual play-area highlighted on the field with a specific colour and it marks the perimeter allowed for each player’s movements.

The urgency to encourage people to safely get outside their homes has resulted in temporary and light transformation of public spaces as resources for a safe social interaction.

#### b. Street redesign for pedestrians and cyclists

During the pandemic two main aspects reshaped the design of public streets. On the one hand, after prolonged periods of confinement, people experienced an urgent need for open air activities, which led to occupying urban spaces as safe meeting points where to spend time together in absence of accessible indoor amenities. On the other hand, the awareness that public transport can be possible infection carriers and that sharing individual vehicles could rise the spread risk, resulted in the effort of public administrations to prevent the excessive use of cars by providing more space for cyclists and pedestrians.

Numerous studies confirmed a correlation between mobility behaviours and the spread of the virus (Carteni et al., 2020; Connolly et al., 2020), as a consequence, governments applied restrictions on the use of public transport. A significant reduction in the maximum capacity of public vehicles was accompanied by the recommendation to avoid – or limit – the use of buses, trains, ferries, etc. This restriction highlighted the negative consequence of decreasing the use of public transport. In fact, by internalising a general scepticism towards shared mobility modes, the risk to foster behaviours in contrast with the achievement of sustainability goals became quite high and worrying (United Nations, 2020).

Trying to mitigate the bad side effects of public transport restrictions – also in the long run – the revalued use of bike and pedestrian lanes emerged as an opportunity to accelerate the transition towards sustainable mobility and as a resilient response to the pandemics. Moreover, cycling has been the only mode of transport that had a less severe decrease during the pandemic (Aloi et al., 2020; Teixeira & Lopes, 2020). In this framework, the rapid transformation of urban streets is clearly

a significant change responding to relevant needs such as travel for short and medium distances during the emergency.

In the second phase of the Italian emergency state, in the city of Bergamo – one of the most hit areas in Italy – groups of citizens from local associations (FIAB-Pedalopolis, Bike2UniBg, Legambiente and others) decided to bring awareness on biking as a sustainable and safe urban transport mode. With the initiative “#Bergamoriparteinbici” (*Bergamo restart by bike*) groups of local cyclists organised biking tours and hung educational posters in the city. With these posters, the promoters of the events communicated the biking distance from the outskirts of Bergamo to the city centre through coloured isochrone and exhortation mottos. The aim was to reveal that bikes can be a valid alternative to cars and buses not only during the pandemic. In fact, this social movement is still active, more associations and privates currently support the initiative, and it became a platform for the critical mass to start a dialogue with the local administrators asking for pop-up bike lanes, restricted traffic zones, implementation of bike-sharing services, and other measures that can facilitate the widespread use of bikes.

On a planning level, the city of Bogotá – affected by significant traffic issues according to the Global Traffic Scorecard by INRIX (a traffic data analytics company) – invested into substantial policy changes to benefit from the temporary traffic decrease due to the COVID-19 lockdown. Responding also to the lack of a subway system, the Colombian capital created an 84 km emergency bike network. In a relatively short time, the city’s development plan set the new goal to expand bicycle routes to a total of 830 km – meaning adding about 1/3 of the existing lanes. This structural change was also the result of local initiatives started in 1974 with mass cycling events. Every Sunday, the event Ciclovía still limits the use of central city streets to cars. This changes the aspect of public spaces in Bogotá that are normally occupied for the 85% by motorised vehicles.

The same shift in mobility plans occurred in other traffic-congested cities. During the COVID-19 pandemic, Lima, Paris, Brussels, Barcelona, Berlin, Milan and many other cities invested in creating bike lanes and reducing the speed limit of vehicles in central streets. In these cities, the expansion of bike lanes, the implementation of bike parkings and sharing spots is an ongoing process that has been accelerated thanks to conditions created by

restriction measures. In Milan, for instance, this car-calming policy has been launched with actions called “Strade Aperte” (*open streets*) which followed the flexible regenerative approach applied to the urban initiative “Piazze Aperte” (*open squares*) where, with simple and reversible road markings, the city offered new public spaces for adults and children, encouraging walking, cycling and the use of electric scooters for moving in the city.

These emergency actions are the starting points of urban regeneration projects that cities aimed at developing also by acknowledging spontaneous boosts for transformation coming from urban users. In Brussels, the “summer streets” turned asphalt lanes for cars into temporary playgrounds where families could spend their time outdoor organising activities and performances for the kids of the neighbourhood in August 2020, in a period where governments advised against travelling for holidays because of the health crisis. The idea to ban cars from streets and use the streets as collective spaces for social activities succeeded in creating a lively and safe atmosphere that played a role in reassuring people during the emergency. For this reason, the “summer streets” were prolonged, and they also became supported by the regional authority through the still ongoing program “Bruxelles en vacances”.

Similarly, the municipality of Porto chose 13 streets in the city centre to experiment with temporary car-free areas during the weekends of the summer 2020. Drawing functional spaces on the ground with geometric shapes and a manifesto with instructions, public areas were designed for hosting four main uses: temporary gardens with potted plants, parking lots for bikes, steady informal activities (where it was allowed to bring chairs, tables, stalls, etc.), and a side lane for walking and cycling. When bigger events were organised (i.e. skate workshops) the municipality asked participants to subscribe with a formal registration in order to guarantee social distances and avoid the crowd.

Although not all these measures have been prolonged after the period of heavy COVID-19 restrictions, they are significant examples of how urban transformation can adapt spaces and transport modalities for emergency needs.

#### c. Adaptation of buildings as emergency health-care hubs

With the same principle of adaptation, public and private buildings such as schools, hotels, supermarkets, and sport centres have been repurposed for offering healthcare services. The rapid transformation of available buildings responded to the primary needs of two different phases of the emergency: firstly, the demand of beds for coronavirus patients that exceeded hospitals’ capacity, and secondly, the purpose to test and vaccinate as much people as possible in short time while also guaranteeing a good distribution of test and vaccine hubs.

In the first case, when the virus was spreading widely and the numbers of infected people were escalating fast, governments called for converting existing buildings into hospitals. This request was in contrast with the complex licences and requirements that a proper hospital must have to fulfil its purpose. Nevertheless, exceptional non-healthcare buildings have spatial characteristics able to provide care for coronavirus patients with light symptoms. Hence, they represented a valid option to lighten the patients load in hospitals.

In April 2020, the American Institute of Architects responded to a call made by healthcare providers developing design ideas and guidance tools for “alternative care sites” (ACS). The task force defined a set of important areas of evaluation for selecting ACS coherently with an appropriate adaptive reuse of existing buildings. This initiative also monitored and mapped ACS case studies in a database that can serve as a collection of information and reports on design experiences provided by architectural firms and organisations.

The temporary hospital in the Jacob K. Javits Convention Center, New York, was one of the first ACS and it hosted almost 1000 beds in the largest hall where single-bed rooms were built with panels and curtains. In New York State, also the USTA Billie Jean King National Tennis Center in Queens was converted to have 350 beds, and other spaces were identified to implement the bed capacity: the Brooklyn Cruise Terminal, the Aqueduct Racetrack facility in Queens, CUNY Staten Island and the New York Expo Center in the Bronx.

Another conference centre, the ExCeL, was converted in the UK into a temporary hospital facility with 3500 beds while, in Australia, the Silverwater prison of Sydney hosted 33 beds.

Obviously, the adaptable buildings should have

some relevant features such as several entrances, fronting a main arterial road, access to enough power and water, and flexible floors arrangement. Their efficiency is much more relevant when they are not distant from main hospitals with specialised equipment and healthcare workers that can be available for extreme emergencies. In Barcelona, four buildings have been matched with four health centres becoming new branches of overcrowded hospitals (the CEM Olímpics Vall Hebron became an extension to the Hospital de la Vall d'Hebron, the CEM Marítim with the Hospital del Mar, the CEM Guinardó extension to the Hospital de Sant Pau, and the Hotel Catalonia Plaza matched with the Hospital Clínic).

The conversion of sports arenas, community centres, and hotels has been crucial also for the main purpose of isolating infected people – with no need to equip rooms with machinery – as in India, where the railway network converted old train carriages into isolation wards.

A second need has been fulfilled by adaptive public buildings during the pandemic. Moving into the vaccination phase, specific healthcare hubs had to meet the demand of a numerous population spread all over the territory with the recommendation of avoiding unnecessary transfers. These circumstances suggested again to rethink the existing resources and opt for a conversion of uses of the public buildings that were declared partly unusable in their main function due to the emergency. For vaccination purposes, schools, sport centres, exhibition and conference halls were organized as spaces able to treat continuous flows of people with multiple entrances, vaccination rooms, floor signs for paths and distances, room dividers made of panels or curtains and many other temporary infrastructures and tools (Patino, 2021).

#### d. “Retrofitting” of residential spaces and economic activities

The new lifestyle conditions set by the virus seriously affected not only the main infrastructures of urban systems such as public transports, parks and health care services. Also everyday spaces like homes and shops of the food industry (restaurants, cafes, pubs, etc.) have undergone a process of reconsidering basic spatial features.

Suddenly, for many people homes turned into multifunctional areas that could host several functions in one space – sometimes shared with other housemates and likely to change uses over time – and

became a safer alternative to offices and schools. Spending more time at home gave a prominent relevance to the quality of indoor design and to the equipment of private outdoor areas such as backyards, courtyards, terraces and balconies. These outwards extensions of houses are tools to both connect with the surrounding spaces and with the neighbours (Zacka, 2020). Indeed, balconies and terraces were used as spaces for rituals, helping to cope with the uncertainty of the emergence (Xyglatas, 2020), and the revaluation of outdoor areas led to reconsider priorities in the characteristics of apartments, thus influencing the real estate market (Gray, 2020; De Toro et al., 2021; Poon, 2020).

For social and health reasons, the design of rooftop and balconies gained special relevance that manifested itself in private refurbishment initiatives (Khalil & Eissa, 2022) and in more popular projects and guidelines. In fact, 130 ideas to use urban roofs as green and collective spaces were developed by MVRDV and Rotterdam Rooftop Days, and collected in the Rooftop Catalogue (Dakencatalogues, 2021) as output of Rotterdamse Dakendagen, the Dutch organisation that committed to promote rooftops as spatial infrastructure for a sustainable development of the city. Proposals for prefabricated balconies have been studied to implement existing facades with parasite architecture modules. It is the case of the balcony prototype “Stayhøme” by Luis Quintano that was presented to the ideas competition “Architecture for the Day After”. Meanwhile, the demand of dwellers for open private spaces is also affecting the business of window frames that are investing in innovative technological solutions based on the extension of glass walls outwards, converting windows into balconies (Bloomframe by HofmanDujardin) also in case of sloped roofs (Cabrio by Velux Spain). With the same principle of retrofitting through the expansion and reorganisation of indoor spaces, food activities had to face the emergency ban of regular dine-in services and had to adjust to new circumstances. During the “stay-at-home” phase, restaurant operators started to address the process of reopening considering the limited numbers of allowed customers, temperature screening, hygiene requirements, and social distancing recommendations. Not referring to measures related to contactless menu, distance devices and reservation turns, the design implications for the restaurant industry during pandemic highly changed these spaces.

As the first spatial solution, the implementation of

pandemic dining-room capacity required the use of adjacent sidewalks or street areas as spaces for setting up temporary dehors and terraces. The expansion of dining rooms in the public urban space activated some parts of the city and contributed to revitalising the streets after prolonged periods of confinement. The success of this activation is testified by the conversion of temporary permits into permanent programs that led to amendments to urban zones and measures as it happened in New York with the Open Restaurant Program and in San Diego with the program Spaces as Places, both based on allowing restaurants to extend outdoor seating onto sidewalks in exchange for a fee.

The contribution of food businesses in creating outdoor areas of high quality surely fosters social activities in public spaces (Gehl, 2011) but it is not the only aspect of the “retrofitting” process that the restaurants underwent. The American design team MASS has been engaging with the issue of the food industry facing viruses for 10 years in response to an epidemic disease of tuberculosis. After the studies carried out in Liberia with ebola and in Haiti during cholera, the MASS Design Group partnered with healthcare practitioners and co-developed design guidelines for restaurants (MASS, 2020). The document released in 2020, shows spatial strategies focused on the visualisation of sanitary protocols in terms of zones and flows to be spatially addressed in order to reconfigure also the indoor spaces.

In addition to the necessary equipment for ventilation and hygiene, some diagrams depict the sequence of spaces calling for separation of entrances for staff and guests, clear definition of exchange/shared zones between staff and guests, visual relationships between kitchen and dining rooms to provide trust, revised size and design of furniture due to distance requirements. This work, intended as a form of healthcare architecture, organises the knowledge for an efficient reorganisation of spaces in response to COVID-19 with the goal to gather design references and expand the catalogue of strategic design solutions.

More than offering inspirations, the diagrams of the adaptation of restaurants underline that the virus brought new rules in the way people engage with social spaces, and thus a new layer of spatial needs and resources is added to the “retrofit” of existing economic activities and to the design of new spaces.

## 5. DISCUSSION

As emerged by the European policies previously framed, the integration of all phases of DRM is needed to *build back better* in a perspective of preparedness for future events. In this sense, EU policies on climate change and adaptation lead the way to further integrate disaster-risk resilience into urban design policies and strategies.

Worldwide creative attempts in practice, even if provocative or visionary in their approach, suggest the effort to provide spatial design solutions that enable forms of care and collective engagement for accessibility to public spaces without forgetting to minimise risks. Conditions such as the flexibility of open spaces, the high-risk awareness of city users, and a certain level of freedom given by the strict urban policies during the COVID-19 pandemic has allowed these solutions to take place in privileged areas. This means that the lack of favourable conditions led to a different set of public rules and behaviours. This is the case of the examined Italian Region (Campania), where the use of public spaces and facilities has been forbidden longer than in another parts of Italy. The examined example of the Campania Region did not focus on the emergency in a structural perspective by building back better urban resilience, as it merely focused on the management of health crises and related issues.

Furthermore, the contrast between the slow mainstreaming of global policies of emergency management and the rapid response of adaptive spaces underlines that societal behaviours, needs and creativity are enormous resources that are often difficult to exploit by decision-makers, especially in emergency situations. In this controversial gap – between technocratic decisions and society contribution to the solutions, but also between preparedness and response actions – the public and collective spatial realm of the urban environment embodies a promising ground for rethinking resilience and adaptive design concepts in relation to the DRM governance at the global and local scales. The description of interventions that have been carried out to improve the safe access and the livability of green and open spaces, public streets, temporary health-care centres, residential units and economic activities, highlights that in some phases, the Italian government and the Campania Region missed the opportunity to address the public space as a resource to mediate between the need to contain the spread of the virus and the right for a psycho-physical wellbeing. Even



without considering the strict lockdown that Italy faced in the spring of 2020, the closure of public spaces declared by many Mayors in Campania in the late summer-autumn of 2020, went in an opposite direction compared to the creative actions applied in the parks and squares of the USA and North Europe. The capacity of existing public spaces and their possible management has not been addressed as a condition to be implemented or controlled through design interventions aimed at building back better. The lack of a cultural link between DRM and urban planning led only to the solution of avoiding the contagion by forbidding the use of public spaces at the cost of human interactions.

Similarly, in Italy, and especially in the Southern regions, financial support for individual sustainable mobility (purchase of bikes, pushing scooters and electric mobility devices) was preferred to the implementation of pop-up bike lanes, missing the opportunity to frame public spaces as sustainable infrastructures and create a valuable and long-term impact on urban mobility and behaviours. In addition, private economic activities largely benefited from the facilitated procedures for installing *dehors* in public areas also in contexts where pub-

lic space is very limited, for example in the case of narrow sidewalks, and this slowly allowed a form of privatisation of the public ground.

An unconcerned attitude towards the education system during the emergency has emerged also in relation to the adaptation or “retrofit” of buildings. While schools have not been closed for long periods in other countries and, to a certain extent, also in other Italian regions (Lindblad et al., 2021), the Campania Region proposed “distance learning” as one of the first measures during every peak phase of the contagion. Although this shows a remarkable concern regarding the spread of the virus among young students which were the less vaccinated group, no spatial solutions were addressed as possible alternatives to the distance learning through online media. In this case, a temporary expansion of the school functions into other flexible, larger spaces or also into open air settings – where safe distances could have been applied – did not find place in the political agenda, alongside with the healthcare hubs (Fig. 2).

The retrospective comparison and discussion among national and local emergency measures, on the one hand highlights the re-appropriation and adaptation of spaces during the pandemic, on the



**Figure 2:** Open-air school room in the Garden of the Brunelleschi High School in Afragola (permanent adaptation, already existing before the pandemic).  
Source: Anna Attademo ph. (2020)

other, points out the underestimation of resilient networks of urban spaces in the DRM referred to health crises. Nevertheless, the chances offered by the COVID-19 disruption to *build back better* allow for meaningful trajectories to be implemented at multiple governance scales.

To some extent, the pandemic accelerated the transformation processes ideas and approaches already developed in the last years in response to the acknowledgment of resilience as a key character to face the contemporary challenges posed by climate change. This relates especially with the central role given to open spaces, particularly green infrastructures, as ideal networks of places for safe recreational activities and for improving psycho-physical wellbeing during partial-lockdown periods. In this context, the review of practices contributes to shape and enhance the concept of *(urban) pandemic resilience* (Sharifi et al., 2020; Edmond J. Safra Center for Ethics, 2020) by highlighting what spatial characteristics and urban strategies have improved the resilience of cities during the COVID-19 outbreak.

## 6. CONCLUSIONS

“2020: A Year without Public Space under the COVID-19 Pandemic” is the title of a special issue edited by Luisa Bravo and Hendrik Tieben for *The Journal of Public Space* (2020) in which researchers from all around the world examine the range of impacts of social distancing, smart working, and other related measures to limit access to public spaces due to coronavirus lockdown. In fact, during the more severe moments of the pandemic, it can be stated that public spaces temporarily lost their function and meaning, being temporarily not accessible by everyone at all time, as by definition they should be. In the same issue, Maurice Harteveld underlined the necessity of designing public spaces for “domestication”: «Ultimately, public space nearby becomes important. The urban space becomes an extension of the living room, even the urban living room itself. And, ‘domestication’ turns into a social value. The related shifts in using, appropriating and experiencing public space generate a wide variety of design assignments for the public space and the urban fabric. A strong call to design for all, including the equal provision of public space at local levels emerges. Different people, different places, thus different designs!» (Harteveld 2020,

p.63).

*But the question remains still open: how to design networks of sustainable and resilient public (open) spaces to assure a wide use and safe access for all, also during disruptions like the last coronavirus pandemic?*

Aiming to shed light on this question, this paper points out four main recurring elements, which have been useful to examine the best practices:

1. the global level was already prone to integrate biological risks into the DRM, highlighting its relevance as a systemic risk potentially affecting all dimensions of human and non-human life on the planet;

2. DRM thinking is intrinsically related to cyclical phases, where recovery/build back better is already defined as a preparedness to the next emergency in a perspective of sustainability of transformations and general resilience;

3. at the European level, a lot of efforts have been put in the mainstreaming of DRM through policies and organisational frameworks, in order to get the member States ready for future emergencies, but at the COVID-19 spread they put different responses to the health crisis and to related restrictions affecting daily life of people (after the first waves, Italy was one of the most reluctant in loosening restrictions, e.g. the use of facial masks);

4. still at the European level, climate change has been for decades a good training ground towards an enlarged idea of disaster-risk resilience and public space adaptation through sustainable design.

Then, a panorama of examples has been considered in the time frame comprising the beginning of 2020 and October 2022, in which eventually restrictions have been progressively reduced overall. On the other hand, the Campania Region can be seen as an exemplary case in which the overlay of different rigid norms for the limitation of usage of public spaces, has been stricter – to a certain degree – if compared to the national context. These approaches in decision making have been due probably due to the higher population density and to the higher level of environmental vulnerability present in the region.

In conclusion, this paper aims to offer a reflection on the relationship between urban planning and response to the pandemic (Sgobbo, 2020; Bolleter et al., 2022), with specific reference on accessibility to public spaces.

It is not possible to face the pandemic in itself as a whole, but adjustments in policies, decision mak-



ing processes, and related responses need to be accurately made along its overall course, to minimise consequent impacts (Yamori & Goltz, 2021). To this end, the purpose becomes to create a connection between the set framework of global-to-local responses and the best practices/communities' behaviours, trying to stress out how the conceptual framework of policies can influence urban planning and design in the long term – and vice versa. This is useful to go beyond temporary actions and to extend their reach towards structural strategies. As at the European level has already been demonstrating for climate change related adaptation schemes and strategies, it is necessary to globally orient the discourse on systemic risks preparedness and related changes in urban design to build policies that can then influence national-to-local frameworks, projects, fundings, territorial and urban planning, etc. Adaptation is an on-going goal, and it is relevant to notice the gap in the field of preparedness (Adaptation gap Report 2020), even if the solutions for disaster-resilience are “no-regrets”, meaning worth pursuing regardless of the ultimate climate effects (the “triple dividend” of resilience; Tanner et al., 2016). Finally, this paper tries to provide insights on how future framework of policies should orient design approaches on the following four subjects:

1. keeping distance can enter the design agenda permanently without losing the quality of spaces and life. In the systemic risk perspective, designing for keeping distance for pandemic purposes shouldn't interfere with other risk-related responses, as in the case of provision of places for post-earthquake aggregation, which need to function also in time of pandemic;

2. public space and public facilities need to be designed in a way that already incorporates a range of potential uses and diverse dimensions.

This is not anymore the time to design and plan in terms of functional zones, but in terms of flexible typological approaches, able to define uses for networks of buildings according to similarities in their type of function or form;

3. the line between public and private activities needs blurred lines, regarding private threshold spaces that can activate public places and use potential, within a defined set of rules that should always guarantee the overall public benefit. In this sense, the recycling of neglected areas, both public and private, can play a crucial role for providing a larger quantity and better quality of public spaces and green infrastructures;

4. communities must be reassigned their right to perform changes in the private dimensions, even in cases of public residential settlements; in this sense, design should already be oriented to accommodate changes; and variables and policy frameworks should just orient abacus of potential transformations to meet different purposes. Connected to all the previous points, communities should be involved in a proactive rather than coercive approach to design, in order to overcome a decision-making process that is based only on restrictions and top-down rules.

Urban planners and designers should work on community resilience (Harteveld 2021) and give people the chance to be responsible for the common health and the common good and activate their own “metabolism of care” (Amenta et al., 2020). This turn will ultimately mean the extension of decision-making power mostly to fragile and risk exposed subjects (children, elderly, minorities, etc.), whose lives are inextricably linked to one another in open and complex systems of ecological interactions, intertwining human, physical, cultural, biological and social aspects and processes.

## ATTRIBUTIONS

All the authors Anna Attademo, Libera Amenta, Marica Castigliano effectively contributed to all parts of this work, and they approve their final version. However, L.A. wrote § 1. and § 3.3; A.A. wrote § 3; § 3.1; § 3.2; § 4; § 4.1; M.C. wrote § 2; § 4.2; § 5; L.A. and A.A. wrote the § 6. Conclusions together.

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