

EDITORIAL

2020, what a year it has been. The world has seen the worst health crisis in more than a century with the Covid-19 pandemic. Public institutions across the globe are still facing unprecedented challenges in dealing with this global crisis, which scale has caught us by surprise. It is fair to say that global interconnectivity has certainly contributed to how fast the virus has spread and to the scale of the pandemic. Though we like to think of our world as technologically advanced this pandemic is showing us that we are still very much vulnerable to threats that have been known to us for a long time. In turn, the Covid-19 pandemic has disproportionately affected already vulnerable populations around the world whether in developed or developing countries. Beyond access to quality healthcare other factors have emerged as contributing to the spread of the virus as well as creating challenging conditions in the pandemic. Dense urban centers have emerged as places where the virus has spread significantly due to the nature of people's interactions, socially, at work or while commuting. Dense urban centers face specific challenges when dealing with an airborne pandemic due among other things to limited open outdoor spaces, socially active lifestyles and outdoor air quality. In that context the widespread model of dense urban centers as the only model of dynamic economic development may need to be re-evaluated.

This pandemic has in fact brought about a number of issues that are being investigated in the current issue of *Vitruvio*.

One of these issues deals with how people interact inside buildings and how architectural design can reduce the spread of airborne diseases through space planning, managing human flows, minimizing surface contact and adequate mechanical systems. These types of issues are not only relevant for public and office buildings but also for housing and more specifically multi-family buildings. In fact, multi-family apartment buildings can be studied in order to address the shift in working habits that has occurred in the past 10 months. As a large number of people have been

working from home for months it has become clear that their living spaces were not originally designed to integrate that new function. Notions of flexible and multi-use spaces are interesting concepts to explore especially as the trend of working from home at least part time is likely to increase in the future.

Another subject discussed deals with providing quality public spaces and emphasizing the need for green and blue infrastructure in urban areas. These types of spaces, including play areas for children, become crucial pressure valves in times where people's mobility is very limited. As a broader theme the quality of dense urban spaces is especially important as cities remain a unique driver in terms of economic growth and social aspirations. On the other hand, there seems to be new opportunities for people to relocate outside major city centers. The trend of working remotely was already developed and will continue to grow as it increases flexibility, lower commute time as well as the burden on transportation and infrastructures. It can also contribute to improve outdoor air quality by reducing pollution. This trend may provide opportunities to revitalize rural communities in dire need of new residents and allow the development or upgrade of a series of infrastructures and services. This would provide a counterbalance to the over densification of urban centers where life overall remains costly.

In the context of students having to shift to a completely virtual space for learning this year, we can see the emergence of promising technology. In fact, VR and AR are providing opportunities for students to communicate but also to design in a co-presence environment where they can interact in real time with their fellow students or their instructor. The use of whiteboard applications such as Miro, Concept Board or Murals has also brought new opportunities to share information in a purely digital environment. In terms of pedagogy the past 10 months have shown us that digital tools have inaugurated new ways to interact and exchange information successfully but it is also clear that these tools cannot replace our need and longing for face-to-face interaction.

As expected with acute challenges the Covid pandemic has revealed complacencies and weaknesses in terms of infrastructures, resources allocations and social behaviors but also shed light on the false expectations that "all will be fine" with minimum efforts from our part. In some way the Covid pandemic is a condensed version in time of the upcoming challenges associated with climate change and its impact on future generations. In all fairness it is always hard to deal with a situation that we have not yet experienced to the fullest but nevertheless our current challenges show us that the human enterprise is still very much vulnerable despite what we would like to think. To conclude on a positive note this pandemic has highlighted a number of areas related to architecture, urban design and construction where there are great opportunities to develop design related innovations that will make us more resilient.

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