CITIES IN A CHANGING WORLD:
QUESTIONS OF CULTURE, CLIMATE AND DESIGN

• Paper / Proposal Title:
Effects of Environmental Factors on the Spread of Covid-19 in Indoor and Outdoor Spaces

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• Abstract (300 words):
In a world ravished by the quick spread of Covid-19 pandemic, millions of people around the world were confined to their homes for several months. Moreover, most governments have advised their citizens to practice social distancing and proper hygiene in order to avoid infection. However, studies have shown that the absolute majority of infection cases occurred in indoor environments. In a few cases, infection was also possible in crowded outdoor spaces. The other observation is that cases many times occur to two or more persons who share the same working space or living space. Therefore, it is clear that architectural spaces, both residential and business, are not designed in a way that can help decrease the rate of infections, especially for air-borne or droplets-borne diseases. This work studies the possible interactions -either positive or negative- between environmental concerns in architectural and urban design and the mechanism of the spread of the Covid-19 pandemic. The short-term benefit of understanding these interactions would be to decrease the current rate of infections, while on the long-run it will also help us design spaces that provide healthier and safer environments for coming generations.
Dr. Karim M. Ayyad is one of the leading academics of his generation in the field of sustainable development and green building. He graduated from Cairo University, after being chosen as the student of the year. Since then, he has made every effort to add to the science and practice of green building and sustainability. He holds 2 master’s degrees from Egypt and Italy in green preservation and marketing of green architecture. His PhD study was on green retrofitting, presenting a mathematical model that can be used to calculate the new GRI index to assess the retrofitability of existing buildings.

He authored 14 papers and 3 books on green architecture and sustainable development. He was featured in several TV shows as an established expert in sustainable development issues. He represented Egypt in many events the last of which was UNDP Regional Meeting for MENA Region. In practice, he has been a green architect and interior designer for more than 15 years, and a partner in MADEIRA-EG Constructions. He has applied his research and experience in various projects in Egypt and the Middle East. In 2020, he also became a fellow of the Higher Education Academy in the UK.