The world we live in is constantly undergoing change. Cities with an increasing percentage of the total population, are also subject to such change. There are new challenges, problems and threats which both cities as well as their inhabitants will have to face. One such threat since the beginning of 2020 (the early months) is undoubtedly the Covid-19 pandemic, which has led to a mental health crisis and entailed high social and economic costs. The **emerging** health problems result from the increased level of chronic stress, observed in particular among city inhabitants. This stress is associated with a change in the needs, expectations and organization of the socio-economic life of city inhabitants, which in turn affects the functioning of many elements of the city system (especially, public transport, education, health care, etc.), and through the network of connections and dependencies, it affects the functioning of the entire city system. **Developing effective measures to mitigate the effects and cope with the stress of a pandemic should therefore be considered a priority.** This is all the more important, as the increased levels of stress from a pandemic are likely to continue even after the virus threat has subsided. In order to ensure their sustainable development, cities and their inhabitants alike, must adapt to the new conditions and develop permanent mechanisms of stress resilience.

Hence, **the main goal of this project is to develop an epidemic stress-resistant city model, based on the experiences resulting from Covid-19.** This model will be based on the following pillars: (1) proposing **coping strategies** for cities and their inhabitants to cope with pandemic stress by (2) mitigating the adverse effects of the pandemic on cities (**mitigation**), (3) reducing the susceptibility of the city system to the stress caused by the pandemic, by creating healthy, safe living conditions and services for its inhabitants (**reconstructing**), (4) adjusting the city structure to the needs and expectations of its inhabitants (**governance**), and thus (5) recovering **(recovery)** and making the city resilient (**city resilience**) to the adverse effects of the current and future pandemics. **Within this model, the city is treated as a complex, dynamic system, functioning in a way similar to that of a living organism, the main goal of which is to develop as a city itself, and to develop resistance to stressors (stress resilience). Thus, it is a self-organizing system, whose homeostasis (understood as dynamic equilibrium), durability and development are ensured by resistance mechanisms, through the ability to adapt to the changing environmental conditions.** This model will be constructed using the available literature and the results of the conducted research. In theoretical terms, it will be based on the theory and methodology of urban development, in particular city resilience, as well as stress physiology, neurobiology and psychology. In addition, by modelling the body's response to stress, methods of reducing stress and improving the health conditions of the inhabitants will be proposed. The model will be developed taking into account the top-down and bottom-up approach, while taking into consideration not only the inhabitants' subjective feelings of stress (questionnaires) along with identifying the main stressors, but also the objective measurements of their stress levels (measurement of the level of cortisol - the stress hormone). Research on the perception of the changes in the functioning of cities which have been caused by the Covid-19 pandemic as observed by the municipal authorities, (surveys, interviews), will be carried out, and visions of experts will also be collected (forecasts) as to the future conditions for urban development (post-covid cities).

Thus, it is a comprehensive, innovative, pioneering research approach which has not yet been used in research on cities, not only in Poland, but also in the world. This approach will make it possible to study the relationship between the level of stress of the inhabitants caused by the Covid-19 pandemic and the characteristics of individual cities as well as the way they have been developed. This data will allow for the development of stress resilient cities, similar to the strategies used in the fight against stressors at the organism level. The pioneering nature of this project is to use empirical data from physiological research on determining the stress level of the inhabitants, the results of which will be used to transform the city structure. New "stress resilient cities" should provide their inhabitants with healthy, safe living conditions, while maintaining the benefits of living in the city.

The project is interdisciplinary and will be implemented by a team of executives composed of specialists in the field of socio-economic geography, spatial planning, urban planning and architecture, as well as in the field of neurobiology, physiology and psychology.