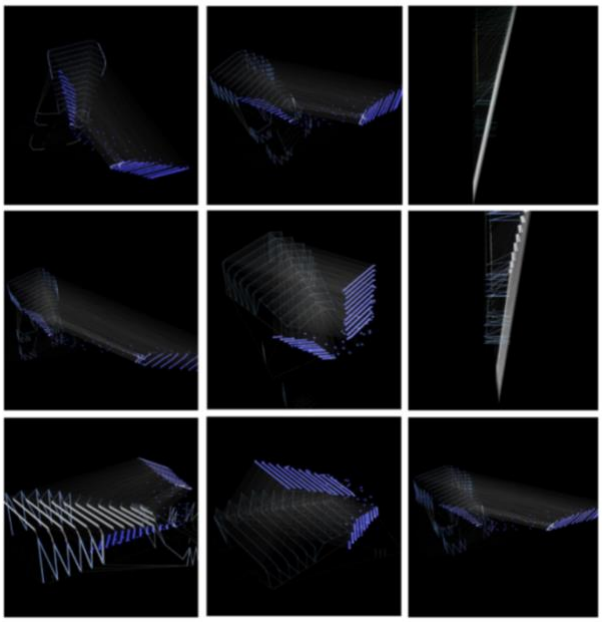

COMPUTATIONAL SUSTAINABILITY

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The modelling and simulation of sunlight, wind and temperature, and their effects on occupant comfort and wellbeing both indoors and outdoors.

The research aims to capitalize on computation design, analysis and fabrication strategies in predicting buildings' performance. The design of a space is invariably linked with how users respond to it, hence influencing the users' behavior. It is, therefore, a necessary prerequisite to investigate spaces under different environmental conditions, consequently improving users'
thermal comfort.

Starting this research on an urban scale, microclimatic devices have been developed with the intention of improving the quality of a designed outdoor space, but often without consideration of different climatic conditions. This has led to the construction of underused urban spaces, which due to environmental conditions, have been deemed undesirable by potential users.

The issue to be investigated in sections. Firstly, investigating the theoretical input on indoor and outdoor thermal comfort, urban climates and the public space users' behavior. This, to be followed with the fieldwork, which includes a number of selected sites to be monitored under different climatic conditions.

The research targets the improvement of the designed spaces (both indoors and outdoors) by suggesting a full set of computational simulations to be applied in the early design stages, hence strongly influence the architectural proposal. Thus, improving the users' thermal comfort tolerance.