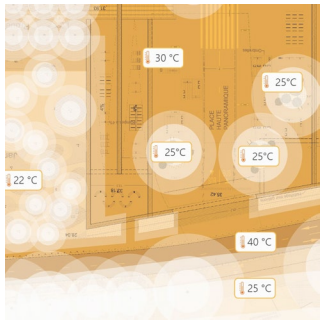
AREP

Urban Microclimate & Heat Island Effects

Climate instability makes it more essential than ever to take account of the IPCC experts' prospective scenarios when modelling local microclimates and characterizing urban heat island effects. To this end, our experts have developed several approaches to provide a response that is adapted to the scale of the project, its stage of development and the desired level of definition.



Athletes' square – Paris Olympic Games 2024
Surface temperatures

Athletes' square – Paris Olympic Games 2024
Creation of "urban cool islands".

L'hypercube refers to AREP's internal research and scientific support workshop, specializing in the modeling of complex physical phenomena.

Contacts
Mateusz.bogdan@arep.fr
Antoine.hubert@arep.fr

Our Expertise

We offer the possibility of **generating** customized weather files incorporating the impact of the nearby urban environment, and prospective or extreme scenarios. The **characterization of urban heat island effects** can be approached qualitatively using an **empirical risk assessment method**, or determined quantitatively using **detailed modelling** that notably considers the benefits of vegetation.

Our Services

Microclimate modeling

- Generation of ultra-local weather files for site climate analysis or a dynamic BES study,
- Computation and mapping of surface temperatures, wind speeds and/or solar fluxes.

Analysis of the risk of urban heat islands at neighborhood or square level,

- Qualitative and/or quantitative assessment of the risks of a rise in temperature, comparison of project variants (morphological and surface parameters) and/or climate scenarios.

Urban design assistance by recommending preventive and corrective solutions/