

Spatialized Air Renewal

Some environments have specific health or comfort requirements. The response to these challenges generally requires a detailed understanding of air movement and renewal. Our expertise in fluid dynamics enable us to accurately understand complex phenomena in confined or climate-controlled spaces.

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

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Our Expertise

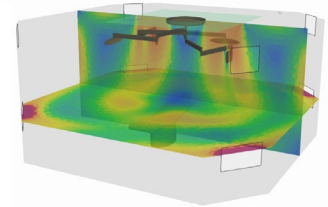
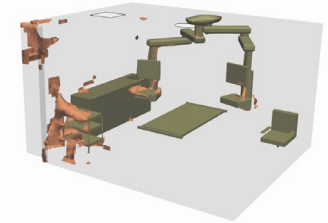
This expertise is based on **computational fluid mechanics simulations**. The calculations can include the effects of **natural ventilation and/or mechanized ventilation** and pre-defined usage scenarios. **The processing and representation of the results** are adapted to the phenomena studied and to the needs of the assignment, using **computer scripts specific to the study**.

Our Services

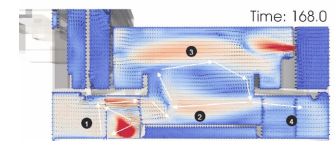
Analysis of the impact of indoor air movements

- Computing and mapping air speeds,
- Identification of areas subject to anomalies (acceleration, recirculation, stagnation),
- Identifying health risks by calculating air change rates,

Design assistance by recommending preventive and corrective measures.



Valence Hospital
Instantaneous air velocities



EOLE project train station
Mapping of particle concentrations and representation of air movements.