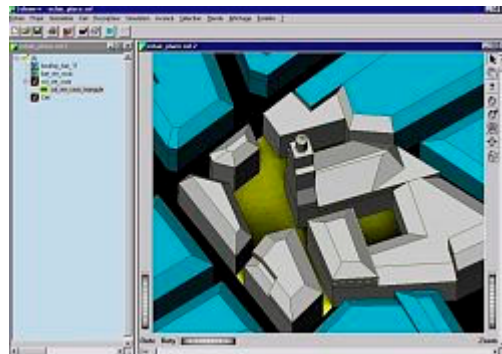


## 1. Toolbox: SOLENE

### 1.1. Description of the tool / methodology of the tool

Solene is a planning and design tool for simulation of sunshine, lighting, and thermal radiation.

It is published in french language. It's developed by the laboratory CERMA Centre for Methodological Research in Architecture and urban ambient Environment created in 1971 in France.



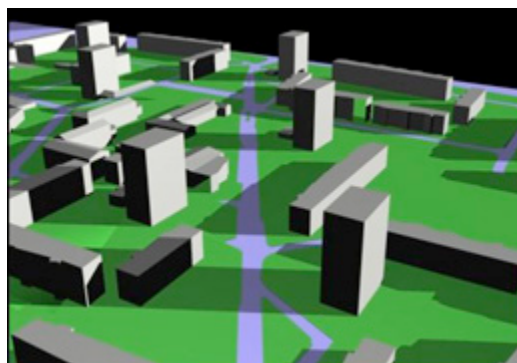
### 1.2. Outcomes of the tool

SOLENE provide assistance for the climatic evaluation and conception of architectural and urban projects.

It makes possible theoretic and practical studies on microclimatical and solar adjustment of the buildings and urban shape.

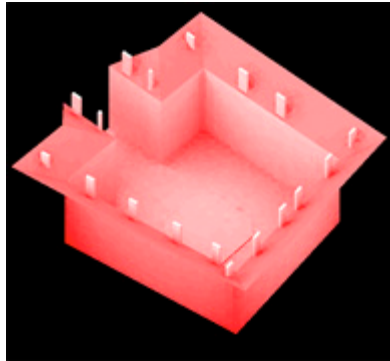
SOLENE can simulate

- ^ sunshine : shade layout, average sunshine period

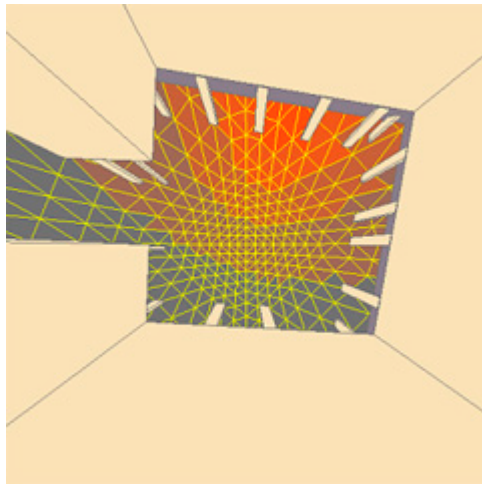


- ^ Solar energy : direct and diffuse

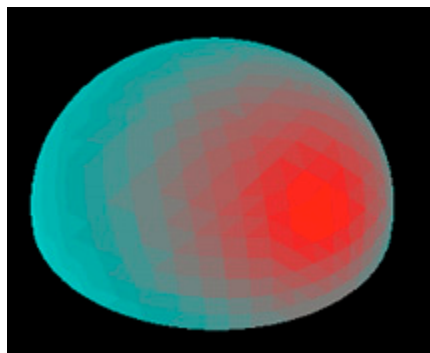
- ⤴ Solar multi-reflexions : the model is based on surfaces radiosity (absorption and reflection) .



- ⤴ Natural light evaluation



- ⤴ Light transmission inside buildings.



- ⤴ Lighting analysis functions.
- ⤴ Thermal radiation analysis that give information about wall's temperature...

### **1.3. Assessment of the tool**

#### **1.3.1. Advantages / Disadvantages**

#### **1.3.2. Improvements**

### **1.4. Examples**

### **1.5. Literature**

*For more information :*

<http://www.cerma.archi.fr/CERMA/expertise/solene/>

[https://listes.cru.fr/wiki/solenetb/public/solene/solene\\_v1#acces\\_au\\_logiciel](https://listes.cru.fr/wiki/solenetb/public/solene/solene_v1#acces_au_logiciel)