



Country / City France

University / School L'école de la nature et du paysage est un département de l'INSA Centre Val de Loire - BLOIS

Academic year 2016 - 2017

Title of the project Urban microclimates: new Urban Heat Islands management (Grenoble's city centre)

Authors Malou ALLAGNAT





PERFORMATIVE NATURE

Barcelona International Landscape Architecture Biennial

September 2018 **Barcelona**

SCHOOL PRIZE

X International Landscape Architecture Biennial

Máster d'Arquitectura del Paisatge -DUOT - UPC

ETSAB- Escola Tècnica Superior

d'Arquitectura de Barcelona

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TECHNICAL DOSSIER

Title of the project Urban microclimates:new Urban Heat Islands management (Grenoble's city centre)
Authors ALLAGNAT Malou
Title of the course Landscape Architecture degree, Graduation Project, Urban Planning
Academic year 2017 - 2017
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Written statement, short description of the project in English, no more than 250 words

In a global warming context, urban microclimate will be the possible cause of heat waves spreading. According to the GIEC, in 2035, 2 out of 3 years will know heat waves as strong as the one we experienced in 2003.

This evolution has us concerned about the operation and organisation of our current territories. A reflexion that leads us to emerging territorial endeavours, in which landscape architects have an essential role.

During the high summer's heat, Grenoble's urban microclimate is highly vulnerable. Nevertheless, the city centre is full of untapped coolness potential. The propagation and the links of thoses "urban cool islands" is a sustainable answer. The project is based on this design : an intricate freshness grid linking Grenoble's center to bigger cool areas: the Bastille mountain and the Hoche park.

A sensitive analysis of temperature in the city centre has allowed to define the most heat vulnerable spaces. This analysis was based on tools influencing the urban microclimate; water, vegetal, soil and mobility. Cool areas and cooling corridors have became tools to set up the project. For the adaptation to be noticeable, this concept need to spread in an urban agglomeration scale : this urban network can make the city more resilient.

For further information

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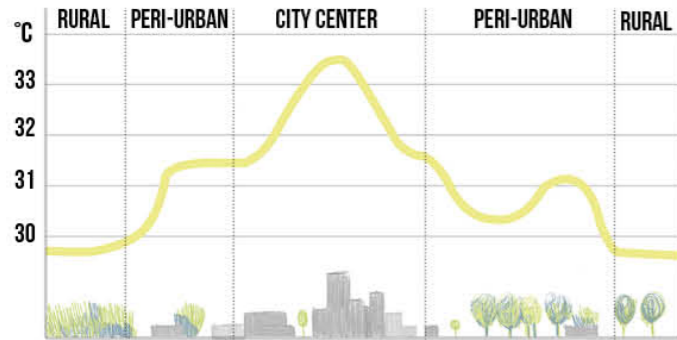
Contact via email at: biennial.paisatge@upc.edu

Consult the web page <http://landscape.coac.net/>

URBAN MICROCLIMATES

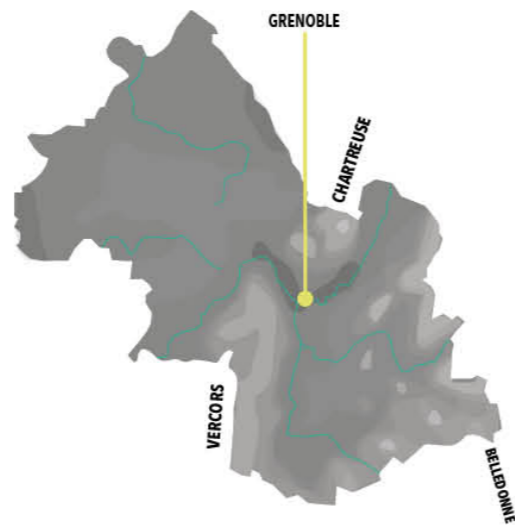
GRENOBLE'S CITY CENTRE

NEW URBAN HEAT ISLANDS MANAGEMENT

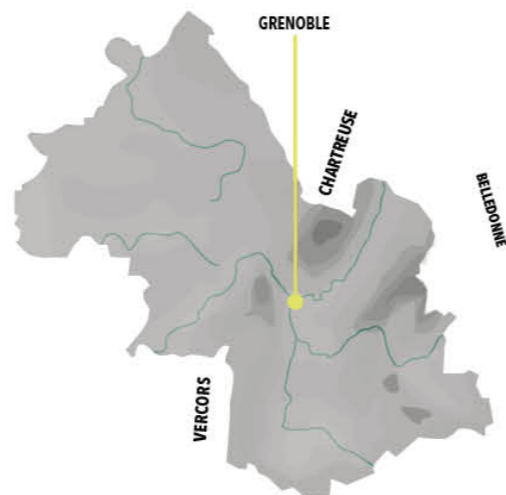


URBAN HEAT ISLAND EFFECT

A DAY'S AVERAGE TEMPERATURE IN SUMMER
(Source : Laurence Berkeley National Laboratory)



30°C >14°C
AVERAGE MAXIMUM TEMPERATURES FROM 1971 TO 2000 (JULY)
Source: Météo-France

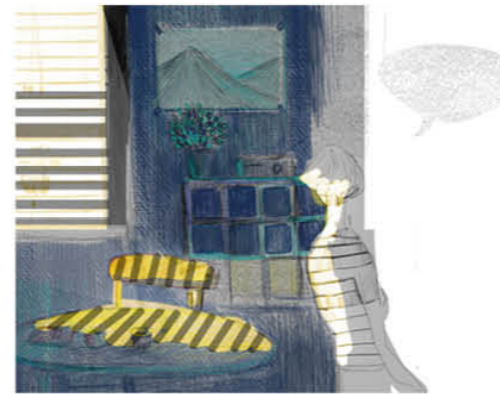


800mm 2000mm
ANNUAL AVERAGE PRECIPITATION FROM 1971 TO 2000.
Source: Météo-France



A SUMMER WALK IN GRENOBLE'S CITY CENTER

It is 4 pm, outside temperature is 40 °C.
She lives on the fourth floor Lesdiguères street (Grenoble's city center).



FELT AIR TEMPERATURE

A sensitive analysis of temperature in the city centre has allowed to define the most heat vulnerable spaces. This analysis was based on tools influencing the urban microclimate; water, vegetal, soil and mobility.





TOOLS > STRATEGIES

WATER
 NATURAL REGULATOR



LA MOBILITY



HUMANE SCALE



VEGETATION
 URBAN COOLING



SUN/SOIL
 ALBEDO EFFECT

THROUGH THE SEASONS



WINTER



AUTUMN



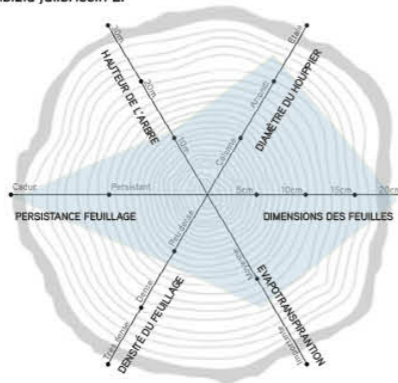
SPRING



SUMMER



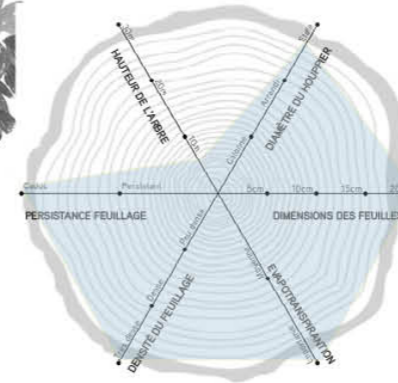
ARBRE À SOIE
Albizia julibrissin L.



DENSITY OF THE SHADOW



MURIER À FEUILLES DE PLATANES
Morus bombycis L.
ROSACÉES



DENSITY OF THE SHADOW

DAYTIME/NIGHT-TIME



LOCAL MARKET



PLAYGROUND



OUTDOOR CINEMA