



# BUILD UP LANDSCAPES OLOT VALLEYS

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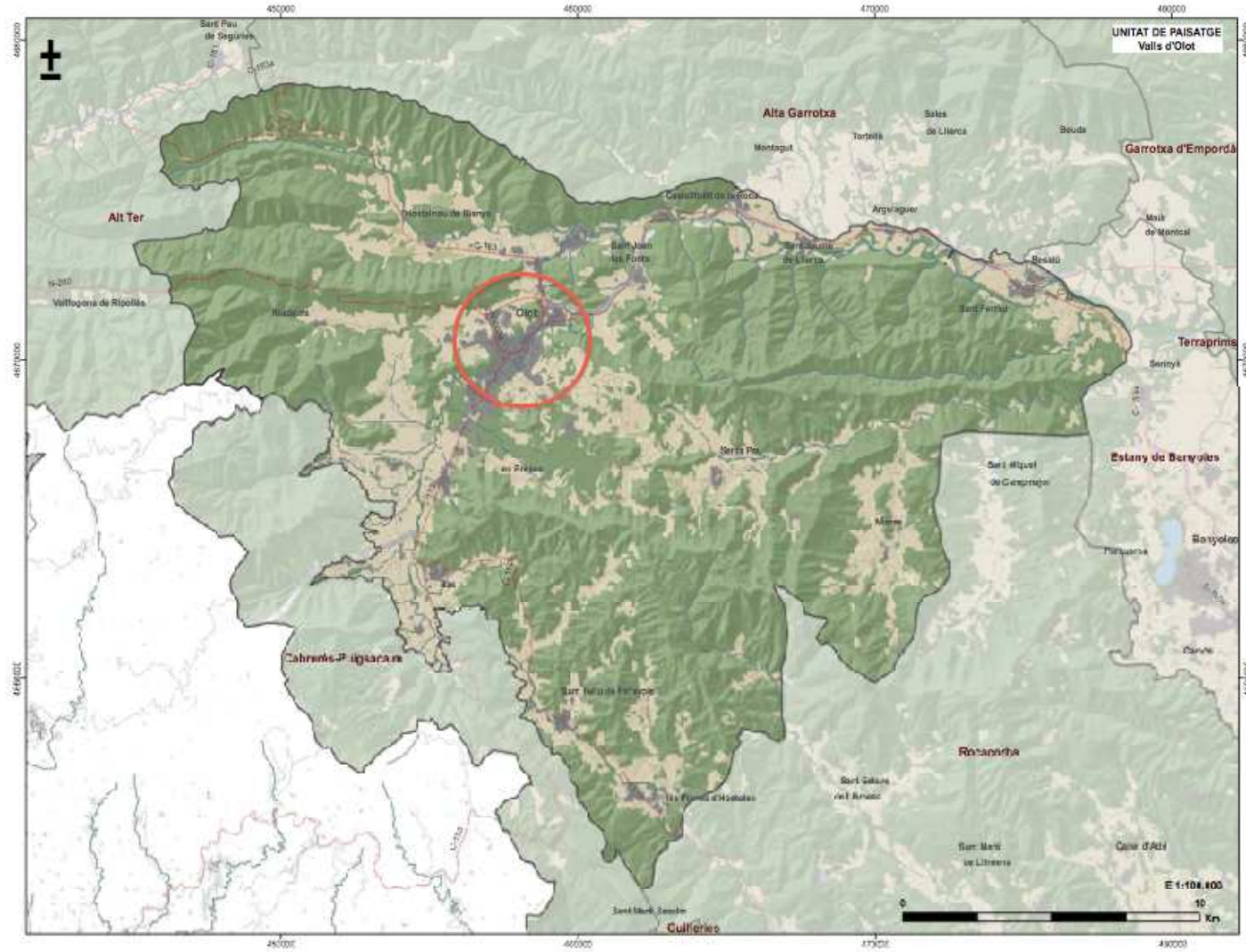
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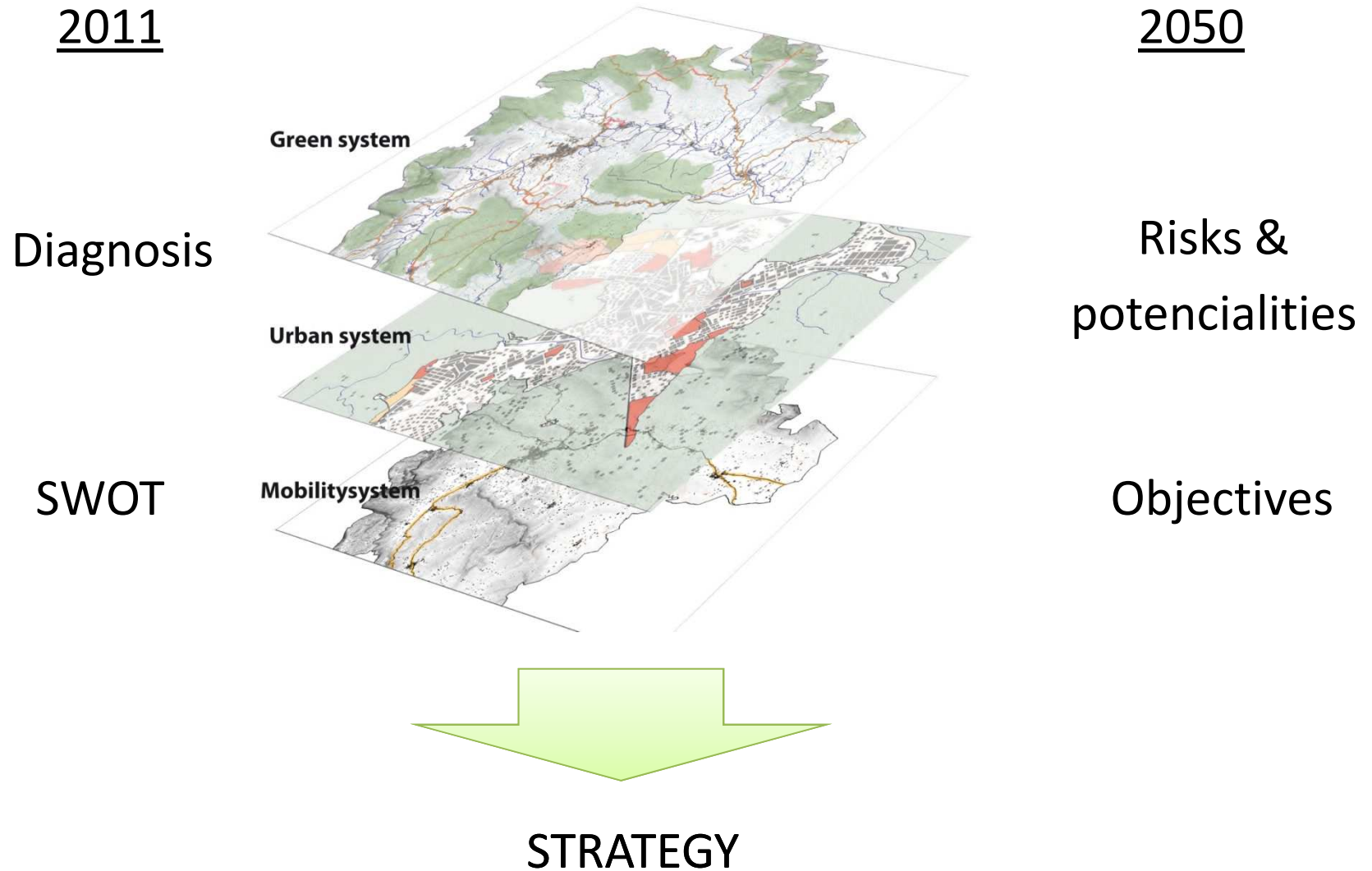
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WORKSHOP'12

# STUDY AREA



# METHODOLOGY



## STRENGTHS

## WEAKNESSES

INTERNAL ORIGIN

1. Valuable landscape
2. Good/ fertility soil
3. Natural park
4. Multiethnic
5. High self-restraint
6. Infrastructure
7. presence of a volcanic area with a good conservative morphology
8. presence of unique landscape
9. architectonic heritage
10. system of paths and natural itinerary, that increase the discovery of landscape
11. natural tourism
12. economic activity, that produce a gastronomic resource
13. presence of unique and precious urban centres like Castellfollit de la Roca
14. large agricultural area with a good productivity
15. production of biomass energy
16. Availability building
17. New urban development
18. Large forest area

1. Abandoned building
2. Bad connection between the cities in public transport
3. Insufficient public transport
4. leave the city for less opportunity of work
5. Growth of elderly population
6. Little cities spread in the region
7. Uncontrolled use of soil
8. Infrastructure that impact the sensitive area, these can cause noise, pollution, disturb and affects the landscape
9. less use biomass resource
- creation of too homogeneity agriculture area, that can cause less difference of the landscape

## OPPORTUNITY

## THREATS

EXTERNAL ORIGIN

1. Disposability agriculture area
2. Population growth
3. Presence of natural park
4. Presence of different energy source
5. Possibility new economic system from natural tourism
6. Opportunity of work
7. The city inside the natural park, and the park inside the city
8. Good sensibility for the landscape argument( observatory of landscape)
9. New infrastructure that connect the different urban area
10. European agricultural politics

1. Increase of private mobility
2. Development of the city without control
3. Environmental pollution
4. Uncontrolled use for the soil+
5. Shortcoming of integration between city and agriculture area
6. The natural park could be a isolated area
7. Landscape fragmentation
8. Uncontrolled use of the protection park from the tourism activity
9. Global energy crisis
10. Global economic crisis

# 2050 SCENARIO

## SCENARIO 1

Temperature:

+0,8°C

Rainfall precipitations:

-5/7%

Population:

+8%

Energy demand:

+4/5%

## SCENARIO 2

Temperature:

+1,2°C

Rainfall precipitations:

-12/15%

Population:

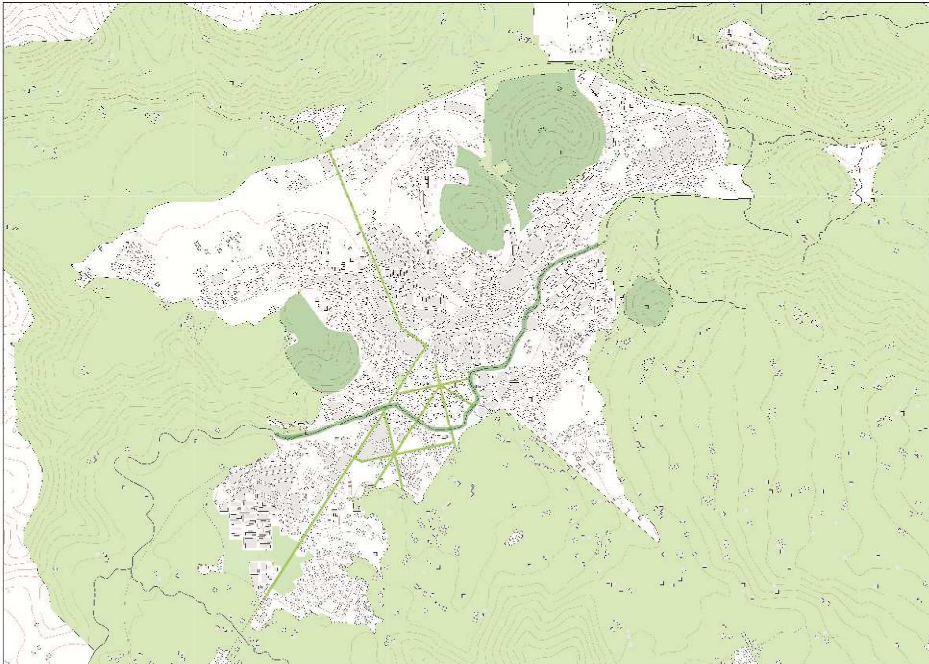
+20%

Energy demand:

+8/10%



# GREEN SYSTEM



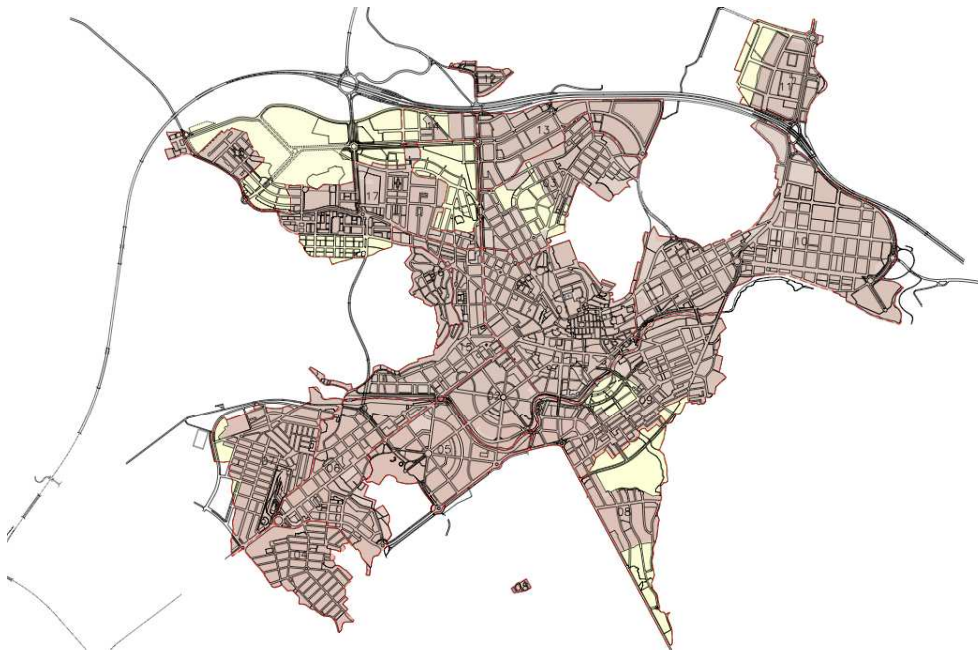
- Valuable landscape.
- Natural Park.
- Agriculture.
- Natural tourism.

## THREATS:

- Less biodiversity.
- Abandonment of cultivated land.



# URBAN SYSTEM



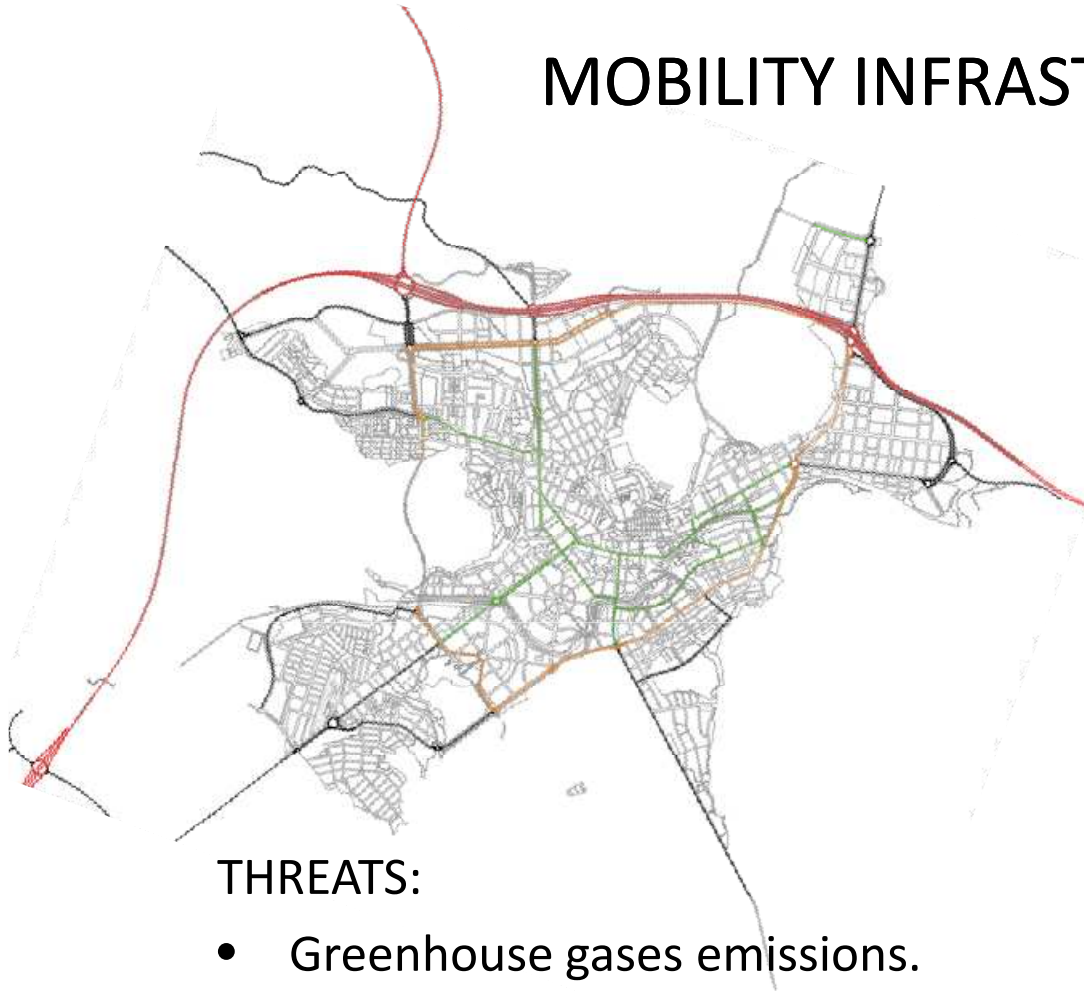
- Olot is a central node of Garrotxa.
- Little cities spread in the region.
- Architectural heritage.
- 2.532 vacant buildings.

## THREATS:

- Increase of water and energy consumption.
- Increase of population.



# MOBILITY INFRASTRUCTURE



## THREATS:

- Greenhouse gases emissions.
- Dependence of fossil fuel.
- Social costs.

- Excessive use of private vehicles.
- High self-restraint.
- Insuficient public transport.
- Functional urban system:

Olot-St. Joan les Fonts-  
Castelfollit de la Roca...





# OBJECTIVES

- Prevent further spread and dispersion of urbanization currently using the existing open spaces inside the town and vacant houses as expansion areas in opposition to the creation of new suburbs.
- Manage the City-Natural Park dichotomy with an integrative planning to avoid the creation of a "naturalized" area as an isolated area inside a periphery with intense disturbances.
- Increase territorial cohesion with an improved internal connectivity based on a model of sustainable mobility.
- Consolidate economic activity increasing quality, taking advantage of landscape as an asset of natural products.



# PLANNING DATA

## SCENARIO 1

+8% Population

2.698 new people



~~27 Ha of new urban area~~

NO NEED TO BUILD MORE  
RESIDENCE

## OLOT

**33.725** Population (2001)

**53 Ha** S.U.D. for residential  
use (POUM)

**100 h/Ha** density

**2.532** vacant homes

## SCENARIO 2

+20% Population

6.745 new people



~~67 Ha of new urban area~~

3.165 PEOPLE IN VACANT  
HOMES (~50%)

3.580 PEOPLE IN 35,8  
NEW URBAN AREA



# URBAN STRATEGY

## CONSOLIDATE SYSTEM

### OBJECTIVES:

- Reduce harmful emissions
- Increase energy performance
- Reuse abandoned buildings

Introduce new technology to improve the energetic performance control

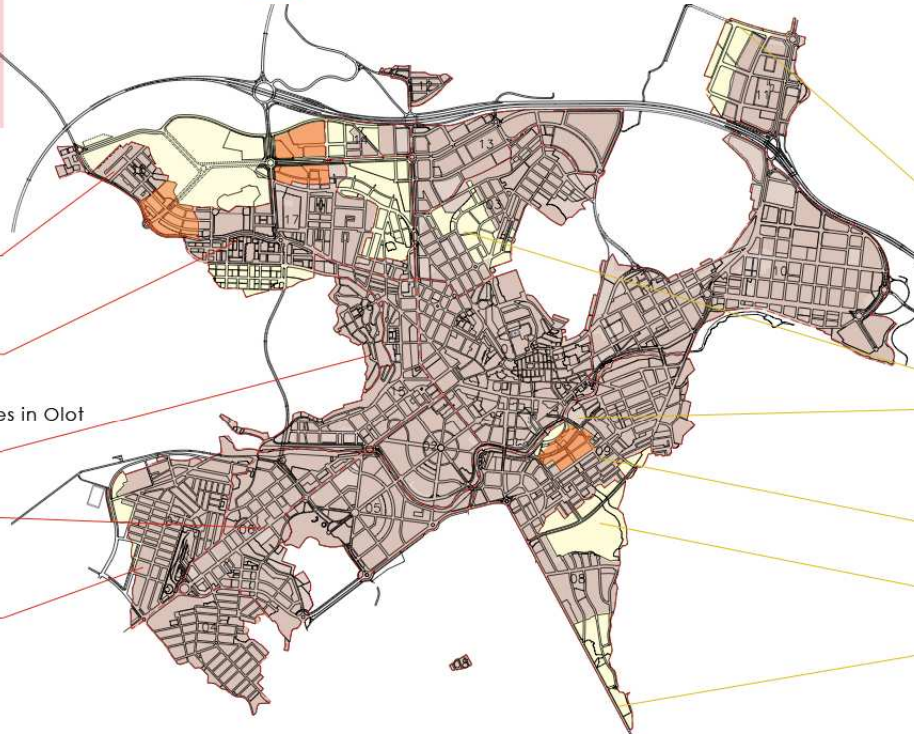
Stimulate the installation of solar pannels and others renoable plants

There are 2.532 empty and available houses in Olot (reconstruction/urban recycle)

Use a LED lights for the urban ilumination

Stimulate stable technology (double-glass, isolable materials)

## FIRST BUILDING AREAS



## NEW DEVELOPMENT AREAS

### OBJECTIVES:

- Sustainability
- Limitate the mobility
- Preserve the natural park/the landscape
- Regenerate

### Use local material to:

- reduce mobility
- preserve landscape feeling
- preserve the tradicional culture

Locate part of the new population growth in the available development areas inside consolidate city

### Green Roofs/Walls:

- absorb emissions
- preserve landscape feeling
- use less energy

Use the physics preexistence (wind and sun direction/morphology)

Constrain the volumetric construction of the rural buildings

Blue Roofs

Olot population (2011) = 33.725 hab

(2050) = Severe Scenary + 6.000 hab

% of new residents to live in vacant apartments and house: 3 000 hab

% of new residents to live in a new developments area: 3.000 hab

% of building area for residential use = 53 ha

- Surface of area for equipament and economics services = 19 ha

- Surface of buildings area for mixed residential and economic activity = 19 ha

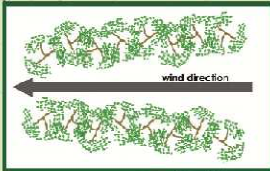
- 30 ha need new population



# GREEN STRATEGY



**Example**  
of a efficiently wind use in a Green Urban space.  
If we put the trees in a particular way we can generate a natural air moving that could decrease the warm feeling and help the people to stay better.



**Objective:**

- Protection
- Connection Green/Urban
- Multifunctional of agricultura
- Reduce the effect of temperature growth

**Strategy:**

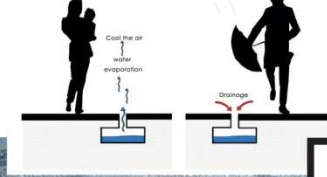
- Strengthen and widen the buffer area around the Natural Park and along the river;
- Tie down the insert of other type of crop;
- Strengthen an agricultural economy, to create a Km Zero system;
- Inserting type of plants in the Green Urban areas that could absorb the CO<sub>2</sub> emission;
- Use the agricultura for get energetic resaurce;
- Project green space to make the most use of the physical property;
- Searching a type of crobs that can bear the climate change whitout upset the landscape feeling;
- Improve the agricultural economy to absorb the new jobs that the new population need;
- Defining and projecting the bordering of the river to decrease the hydrologic risk.



- Natural Park and agricultural area
- Geomorphological areas
- Green bordering river area
- Boulevard



# MOBILITY STRATEGY



**Example**  
small water channels under public spaces pavement. Water evaporation reduce air temperature and acts as a microclimate factor for air cooling.

Water fountains, ponds and lakes and irrigated grads areas have the same effect.



**Example**  
sustainable streets use of photovoltaic energy for safety and low lighting systems in walkable streets.



## Objective:

- \_ Reduce Harmful emission
- \_ Strengthen public transport
- \_ Strengthen slowly mobility
- \_ Social sensibility

## Strategy:

- \_ Introduce new public line, like new bus line;
- \_ Inserting new path and slowly itinerari;
- \_ Connect bike lines inside and outside the city;
- \_ Create network of bike lines in both urban and interurban traffic;
- \_ Project a sustainable street that can collect the rain resource;
- \_ Use the renewable resource to feed the urban light;
- \_ Introduce and projecting fountains, in the urban open space to reduce the effect of warm;



# PRACTICAL CASES



Fundació Pilar i Joan Miró, Palma (Mallorca)

Green and Blue roof  
water reuse as isolation system and  
sustainable roof garden irrigation



Shop in Seoul

Green Wall  
Light. Energy consumption reduction  
low water consumption planted panels



IL BOSCO VERTICALE

Milan

the Vegetation of the south facing  
facades provides heat in winter and  
shade in the summer



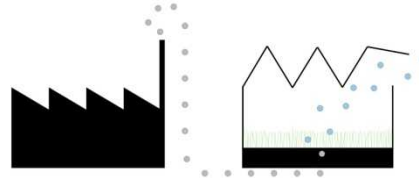
Sciences Academy, California, USA

Bus Station, Olot

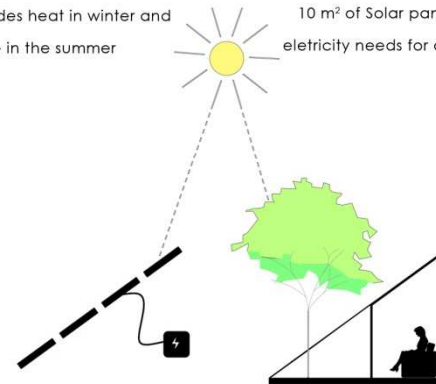
10 m<sup>2</sup> of Solar panels cover the  
electricity needs for a family housing



The rainwater collected by the facades  
can cover 97% of water needs



Rooting zone purifies transforming the carbon dioxide in CO<sub>2</sub>



THANK YOU

