

Construction of bioclimatic house, green urban path project and adaptation of an urban park to climate change



LIFE **CITYADAP3**

Molina de Segura
(Spain)

248,017.08 €

6 months

CO-FINANCING COMPANIES



1

Adaptation of Nelson Mandela Park to climate change, as a model to follow in the design of urban green areas in the municipality of Molina de Segura and in other municipalities.

4

Analyse **atmospheric parameters** to determine the impact of actions

MAIN OBJECTIVES

2

Study and signal a **sustainable urban itinerary** to establish plant elements, that give shade and a pleasant environment, that serves as a model to adapt the city to the effects of climate change

3

Construction of **ecological-bioclimatic house** to sensitise the local population to the reality of climate change and the importance of building more sustainable, green and energy efficient housing

5

Improvement of the **biodiversity of the city and increase of permeable area** in the municipality

CLIMATE RISKS ADDRESSED

- Overheating of urban areas, with heat waves and loss of thermal comfort
 - Rain floods
- Loss of biodiversity due to climatic alterations and increased pests and diseases.
 - Loss of soil, from drags due to heavy rains.

To request the full technical paper on the design of this pilot action, please email lifecityadap3@fmrn.es

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DESCRIPTION OF THE ACTION

- **Ecological House-Bioclimatic Classroom:** recreation of a single-family house of 1 floor as a visitable example of bioclimatic construction. It incorporates eco-friendly building materials (wood, brick, stone,...) and energy efficient systems, with a reduction of the carbon footprint in the construction process. The purpose of the building is to create a multipurpose public space aimed at raising awareness about the environment and climate change. The house is an open space that has a living room, a bedroom, a toilet, a warehouse and a kitchen.
- **Reforestation with native species and establishment of sustainable urban drainage systems (SUDS) in Nelson Mandela Park,** as a role model in the fight against the effects of climate change. Construction of vegetated ditches on road edges, which transport runoff water to 7 trenches and 4 infiltration wells, avoiding dragging and soil erosion and reducing the strut flow of torrential rains. Invasive plants have been removed and more than 600 plants native to the Region of Murcia have been planted: trees (pines, carob trees, ripe trees, clams, carts, walnuts, laurels,...), shrubs and herbaceous.
- **Green Urban Path Project:** study of the characteristics of the streets to create a green path. A project has been drafted with selection of plant species adapted to the area (which is an example to imitate in the rest of the city), linking La Compañía Park with Nelson Mandela Park, in order to mitigate the heat island effect of the city and make the city more friendly.

IMPACTS

You can consult the weather data (rain, temperatures and humidity) of Nelson Mandela Park at the following link and on the City Council's website:

<https://ciudadinteligente.molinedesegura.es/visualizador/d/f6HR-zrMz/ciudad-de-molina?orgId=1&kiosk>

From these data, the influence of the actions carried out in the reduction of the effects of climate change can be analysed. This is basically in the increase in the temperatures of the summer months and the greater intensity of torrential rains, with increased peak flows that can cause flooding.

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IMPACT OF THE ACTION

The **green urban path project is beginning to be implemented.**

The rains recorded during the month of May in Molina de Segura (precipitations of 20 l/m² in 12 hours) have demonstrated the **efficiency of the actions in Nelson Mandela Park**, especially the SUDS, the elevation of the paths above the parterres and the creation of corrugated corks that retain the drags and filter the runoff water.



State of the Park after heavy rains before LIFE CITY ADAP3

State of the Park after heavy rains after LIFE CITY ADAP3

