**THE URBAN HEAT ISLAND EFFECT**

The UHI effect manifests differently across the city. In magnitude highly, depends on structural factors, such as vegetation, altitude, vicinity to water or land use. In the small scale, the presence of certain physical features (such as permeability, albedo, water, vegetation) also play a big impact in defining the manifestation of the UHI effect.

**STUDY OF DENSITY**

Density has a strong influence in the way the UHI manifests at a local scale, and on the possibilities and limitations of intervention. The study of physical density can be done through two main indicators (GSI and FSI) and is the base for the selection of areas of interest.

**GENERATION OF TYPOLIGIES**

The clustering of data facilitates the identification of areas with similar characteristics. As a tool, it can be used for choosing areas that are representative of different conditions (which is useful at the stage of analysis), in the identification of areas with common characteristics (which can determine prospective opportunities for the transferability of approaches or design principles).

**DENSITY TYPOLOGY**

The combination of GSI and FSI helps to identify areas with common morphological characteristics. It is the base for the selection of the five areas of interest.

**TRANSFERABILITY TYPOLOGY**

The combination of local and systemic parameters helps to understand the extent to which similar design strategies can be transferred to other areas of the city.
Design of a metropolitan system

Selection of representative areas

Balancing sustainability and livability in dense urban environments through strategies for the mitigation of the UHI effect

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SYSTEM DEVELOPMENT IN THE SMALL SCALE

A SUMMER SQUARE

A group of unbuilt plots is incorporated into the public realm, and materialized in a way that it provides qualities that are currently absent in the area. Its relation to the water functions and to the public facilities located on its borders determines the final design.

A NEW CORRALÓN

The “corralón” is the traditional building type of La Trinidad, in which a common courtyard has a strong social function. By means of additional regulation, the goal is to shape the future transformation of the neighbourhood’s blocks into a similar model, in which newly created courtyards can have a strong cooling and social function.

A SEQUENCE OF SPACES

A series of public spaces are demarcated and qualified using a continuous physical element. They are incorporated into a bigger system of public spaces, and are designed so that they can offer different functions and atmospheres.

A PARK ON THE ROOF

The continuity of the existing park towards the interior of the corridor is solved by adding a new roof on part of the existing open space, which currently has only parking functions. In this way, the positive qualities and cooling effect of the park can be infiltrated into the neighborhood’s dense fabric, while the parking spaces are maintained. New possibilities for the integration of activities, as well as the facilitation of wind flows, are additional benefits.

AN OPEN FRONT YARD

In an area of expected densification, but with strong inherited aesthetic values, new regulations are designed to allow the incorporation of certain qualities to the public realm. In particular, the traditional front gardens, which define the area’s appearance, are made accessible in order to define a new street profile.

A FOREST IN BETWEEN

In the area of urban expansion of the city, the dimensions and treatment of public space result in an inhospitable landscape. The application of a structural vision allows the incorporation of a vast amount of vegetation which, together with other functions and qualities, defines a new urban forest.

A NEW CITY IN THE MAKING

A critical and explorative approach to the current models of urban expansion, at block level. Two different operations (densification and the superposition of a new layer of public connections) transforms the existing block and results in a richer urban experience.

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