



POLITECNICO
DI TORINO

Honors thesis

COURSE OF
ARCHITETTURA PER IL PROGETTO SOSTENIBILE

Abstract

Title thesis

VEGETATION AND ENVIRONMENTAL COMFORT
IN URBAN OPEN SPACES

Tutor

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by

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Abstract

The presence of natural green spaces within the urban context, as well as improve the quality of life, is the only element that makes possible the survival of man completely artificial environment of the city.

Urban open spaces and vegetation are a key resource for the sustainability and quality of life in cities. These elements help to mitigate the negative effects due to human activities and improve the microclimate of the city.

With the present study is to propose a review, concerning urban green, the regulatory environment, the environmental services in the local planning and aesthetic functions, recreational and social spaces open.

The work consists mainly of four parts, in turn subdivided into chapters.

In the first part, comprising Chapters 1, 2 and 3, are considered the main technical and regulatory tools available to local governments for the management of its assets urban green. In some of these tools urban green is no longer just a space "not built" of the cities, but is intended as a key component to improving the quality of life and urban sustainability. In this sense, it exceeds the thesis of the idea of the garden and public park as individual entities in the urban context: each green space should be considered as an integral part of the whole city's green areas and as such part of a general development plan.

The second part, comprising Chapters 4 and 5, examines the physical characteristics of the climate and its effects on the urban environment and introduces the theme of climate change, which substantially change land use and urban areas by launching strategies aimed at mitigation or adaptation.

Chapter 4, "The urban climate and the action of vegetation", in particular, investigates urban elements that change the climate comfort and thermoregulatory function of urban green spaces, its contribution against the "urban heat island" and for the reduction of CO₂.

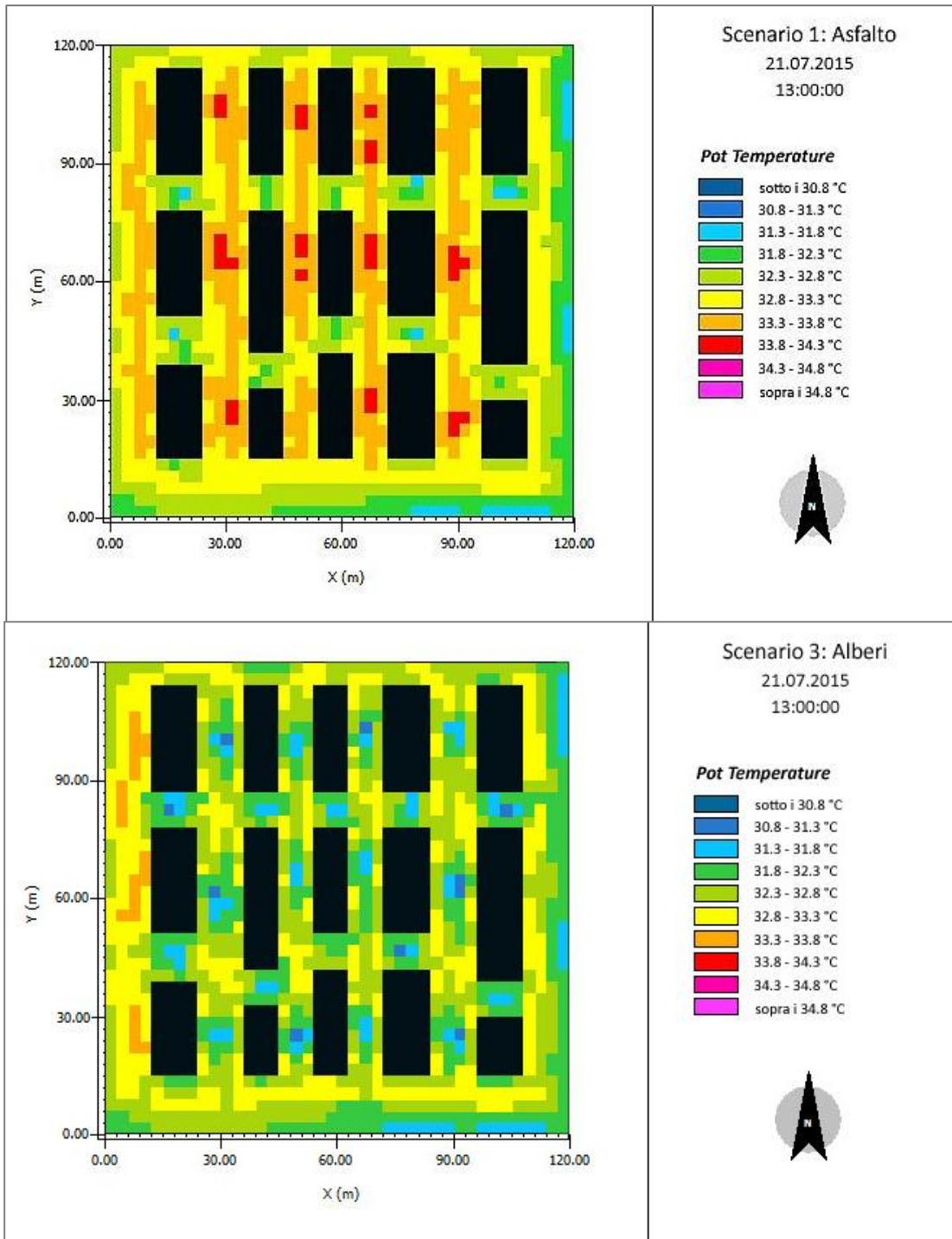
The third part, Chapter 6, dealing instead of the aspects related to the design of urban open spaces; at this stage the focus is on the types of courses, paving, land and services, that these areas have in order to be usable and functional for each type of user.

The last part, Chapter 7, offers an application example for the evaluation in three different urban scenarios, completely paved surfaces, surfaces covered with grass and surfaces with the presence of trees, the decreases in temperature that the different types of vegetation produce, through the use of the program ENVI-met.

The final result shows that good planning and management of urban green areas can contribute significantly to the improvement of human comfort, air quality and climate aspects that are crucial to the urban planning strategies.

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