

Green areas in the city of Asti: urban green - territorial green, plan for an ecological connection

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This thesis aims to acquire and to experience a scientific method of analysis and planning of the territory based on the principles of Landscape Ecology in view of the ecological appraisal of the Municipality of Asti. Unlike traditional planning, such innovative method helps estimate the current processes on the territory, making them more functional. These allow us to perform a qualitative-quantitative appraisal of the transformation processes in progress on the territory, proposing and verifying an hypothesis of intervention.

This study first identified and examined the relevant parameters of appraisal. It subsequently proposed an ecological connection plan, pursuing the conservation of the historical cultural heritage, the protection of the environment and a rational social and economic development. This should make us aware of the importance of the natural environment, considering that it represents a precious and vital resource that must be protected.

Landscape Ecology, a specific branch of general Ecology, deals with the biological organization, both structural and functional, of the ecosystems and/or of the landscape elements which are visible in a specific area (Ecofabric).

The applied methodology has multiple applications: it can characterise and estimate the transformations that the territory has endured with time (rationally carrying out interventions on the basis of what the environment needs); control the plan thanks to precautionary simulations of the intervention proposed, estimating their projection on the units of reference and the area inquired.

Considering such possibilities the study was organized in three different stages:

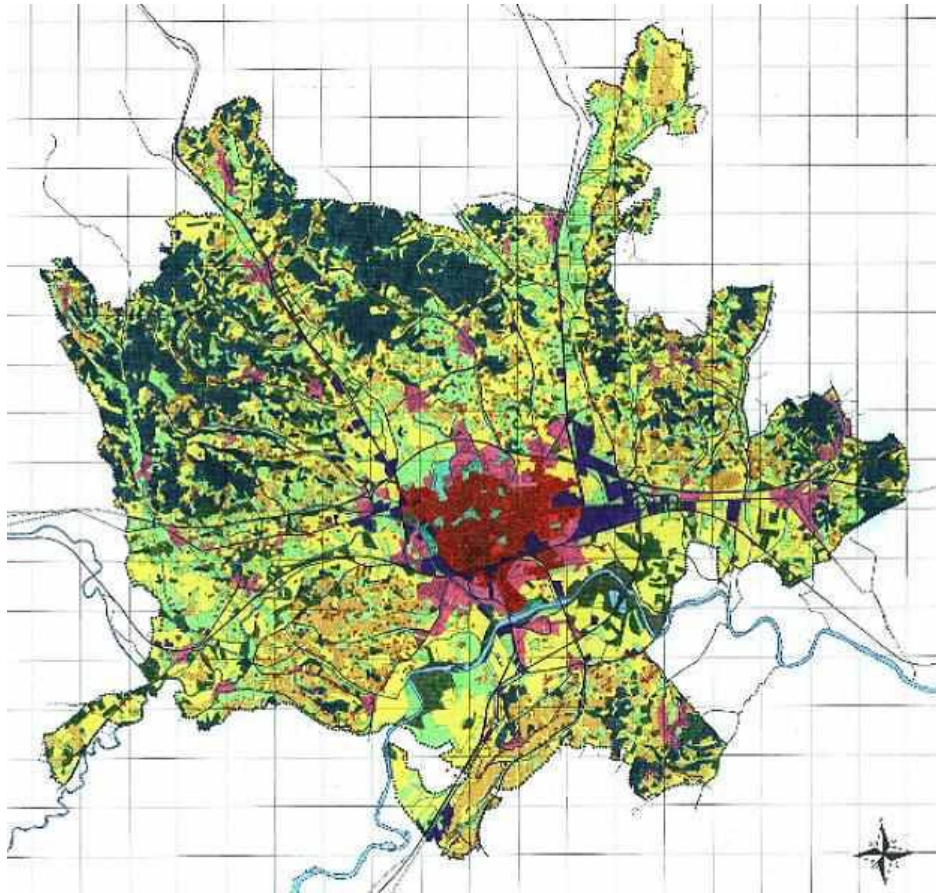
1. control or analysis,
2. plan,
3. verification of the plan.

The stage of analysis was organized through a careful reading of the landscape, considered as a system of ecologically different and interrelated space units, that is to say as a system of ecosystems, or metaecosystem.

It is characterized by various hierarchies of space-time scales and also represents a specific level of life organization, on a higher level with respect to the ecosystem.

To that end four time-limits were taken into consideration:

One referring to 1880, one to 1933, one to 1963, and finally a 1991 time-limit; the reconstruction of the Ecofabric was inferred from I.G.M (Geographic Military Institute) tables and the cartography of the Piemonte Region, integrating the data with information inferred from specific inspections and historical researches.

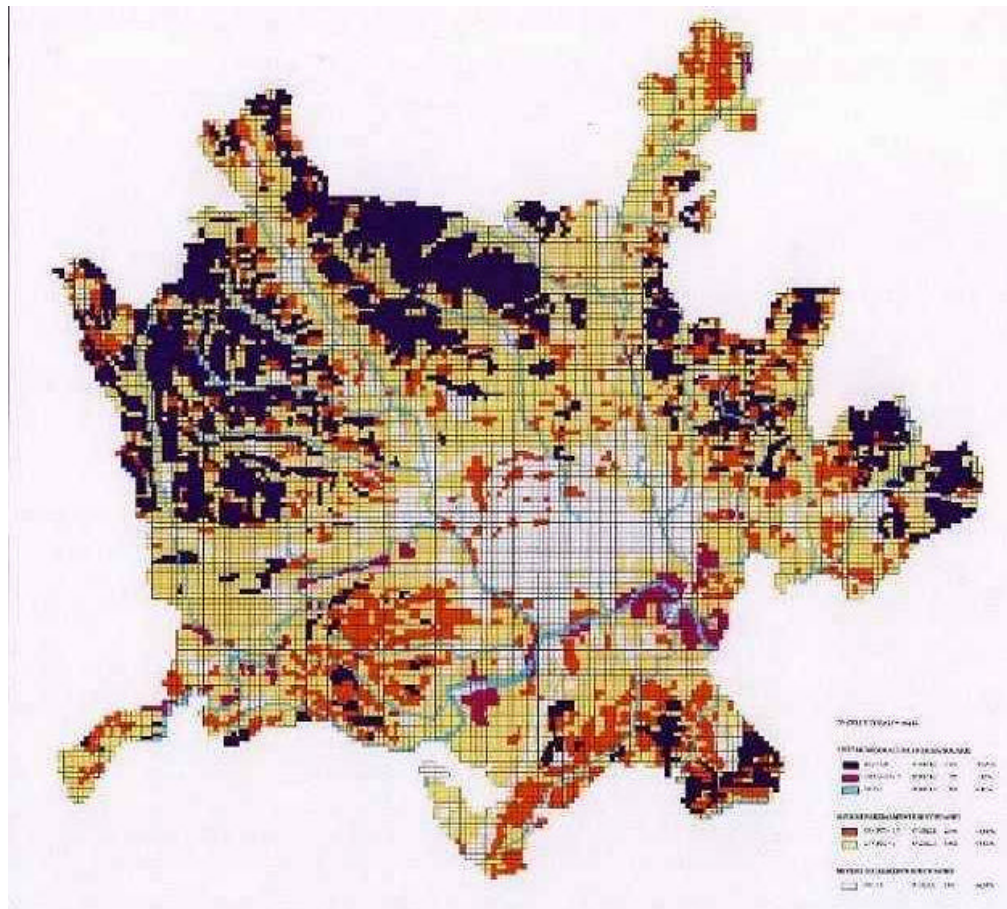


Reconstruction of the Ecofabric referring to 1991 (Table 08)

Moreover, a reference space scale was identified: a territorial area cannot be considered as an isolated enclosed system; otherwise, it would tend to die or would survive with serious difficulties. In fact, it is necessary that the elements of the landscape composing it are connected to each other in an *apparatus* functional relationship, and it should be completely incorporated in an advanced landscape system, concurring to the maintenance of general ecological equilibrium. As a consequence, different levels were analyzed:

- Higher Level, or municipal Ecofabric, pointing out the limiting conditions of the landscape regarding its structural and functional characteristics.
- Level of interest, or intervention, that is the Urban Area.
- Lower Level, defined by seven environmental units of reference, following the main morphologic boundary lines such as ridges and watercourses, and/or obvious anthropic boundary lines.

In the light of this design, I pursued the construction of a General Policy Model, applying and interpreting opportune indexes of ecological control (*Territorial biological potentiality, Human Habitat, Natural Habitat, Standard Habitat, functional Apparatuses, Diversity and Percolation*).



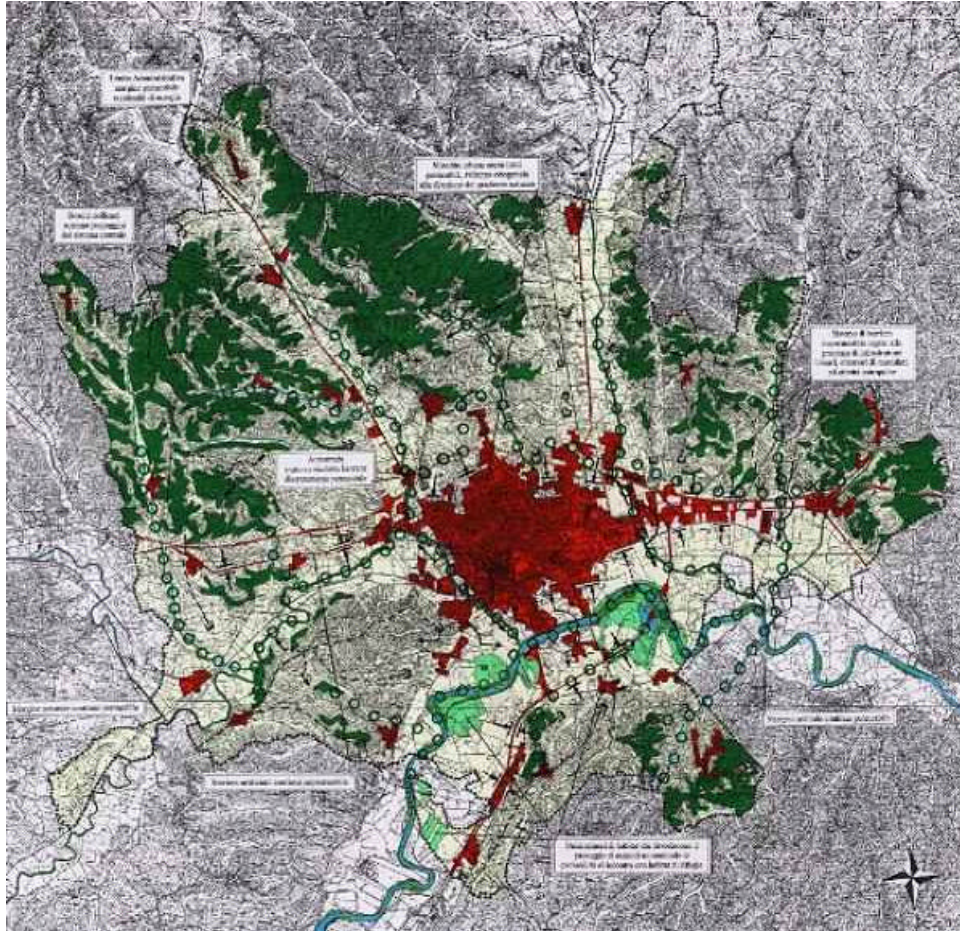
Model of the percolation for the location of the categories of energetic flows to the various naturalness (Table 09)

Some ecological frame of reference were therefore elaborated: *qualitative-quantitative models*, a *model of the landscapes evolution* (Ingegnoli 1979), a *percolation model*, concurring to quantify, characterize and finally verify the landscape structure of the analysed Ecofabric. These also point out the most important evolutionary dynamics, the resources and the deterioration elements.

Thanks to the available data, it was possible to concentrate on the dimensions of the plan, starting from the 1991 time-limit and from the indications of the Town Plan of Asti. The proposed planning line for the total upgrading of the landscape was based on two essential criteria:

- increment of the biodiversity
- recovery of the connections between the several natural elements often terminated by human intervention.

To that end, new ecosystems of semi-natural type were also included in degraded environments, such as disused mines, and in delicate areas such as city suburbs. Creations of artificial corridors of ecological connection were also hypothesised – such as a green bridge linking the Southern area to the Northern area of the territory over the industrial area. This can be inserted in a futurist organization of the city administration.



Model of the opportunities for the construction of an ecological network (Table 11)

Particular attention was devoted to the green system, that is to all the green ecosystems, and to the urban area, trying to create a real ecological network, within the range of the potential interventions.

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