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**Government of anthropization processes: Domain of the territories and cities, Climate changes**

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**Spatial design and environmental sustainability: controlling land consumption in medium-sized city plans, the case of Cerveteri**

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*To tell you about Penthesilea I should begin by describing the entrance to the city. (...) You advance for hours and it is not clear to you whether you are already in the city's midst or still outside it. Like a lake with low shores lost in swampst so Penthesilea spreads for miles aroundt a soupy city diluted in the plain. (...)*

*If you ask the people you meet, "Where is Penthesilea?" they make a broad gesture which may mean "Here," or else "Farther on," or "All around you," or even "In the opposite direc-tion." (...)*

*You have given up trying to understand whether, hidden in some sac or wrinkle of these dilapidated surroundings there exists a Penthesilea the visitor can recognize and remember, or whether Penthesilea is only the outskirts of itself. The question that now begins to gnaw at your mind is more anguished: outside Penthesilea does an outside exist? Or, no matter how far you go from the city, will you only pass from one limbo to another, never managing to leave it? (Italo Calvino, Continuous cities 5)*

In the past few years, the issue of land consumption, considered as a phenomenon of anthropisation of agricultural and natural land, has largely entered the disciplinary and cultural debate in our country, characterising the current planning phase according to two main aspects.

The first happening, linked to the economic crisis that has characterized our country in recent years, seems to be expressed in the strong reduction of land pressure (with a radical re-dimensioning of the entire building sector) and, on the contrary, in a different, unseen articulation of the demand for new building and regeneration of the built environment that is now felt even in medium and small centers (Fregolent, 2006). Settlement sprawl processes and increasing degradation and abandonment of rural territories gradually highlight the ineffectiveness of functionalist disciplinary models aimed at clearly distinguishing between settlement (urban) and territorial dimensions. These processes lead to the definition of a new rurururban territory and in parallel new management processes capable of pursuing objectives environmental and housing quality but also sos-tenability of development models.

The second, which is finding its way to the institutional level concerns tools and procedures for reducing land consumption. Land consumption has as a direct consequence the loss of ecosystem services, which have a very high cost in environmental and social terms in the coming years that not even the National Recovery and Resilience Plan (NRP) could offset. The issue of land consumption has strong implications in terms of climate change and hydrogeological risk by making our territory even more fragile: increasing urbanized land contributes to the growth of total human-caused greenhouse gas

emissions, mainly through deforestation and habitat conversion for agriculture, and at the same time to the loss of biodiversity and unprecedented land degradation. The settlement patterns of the sprawling city "use" previously rural spaces by amplifying the degree of housing fragmentation and land infrastructure (Bruegmann, 2005, Boscacci, Camagni, 1995). This implies parallel increases in costs related to energy consumption, soil sealing, increased demand for transportation, and pollution-increasing urban vulnerability and its effects on climate change (Forino, Perini, Salvati, 2015).

The contribution will propose the experience carried out in Cerveteri for the drafting of the new General Regulatory Plan: a territorial project, oriented quantitatively and qualitatively in the face of the changing needs of social demand and massive development pressure that has involved its territory (going from 26,772 inhabitants in 2001 to 38,056 in 2023, Istat data).

Plans are traditionally instruments called upon to define the demand for land transformation by assigning pre-established land and property rights. If this has worked, and not always, in the past, today it may represent a crisis factor for the Plan itself in many respects:

- the difficulty for administrations to start transformations with respect to allocated development rights,
- the mismatch between transformation proposals and land regime,
- the difficulty of managing heavy quantities of pre-existing rights 'attached' to land.

It did not seem possible to re-propose a traditional plan model for Cerveteri: the territorial singularities and the incidence of external relations on a metropolitan dimension were evident. A new form of plan was hypothesised, open and flexible, which, regardless of traditional zoning, would allow both innovative forms of distribution of development rights and criteria for protecting environment and agricultural economy that had characterised Cerveteri and, more generally, the northern area of Rome until the mid-twentieth century.

The challenge, for the drafting of the Plan, was immediately to identify an unprecedented settlement demand, linked to high levels of environmental quality and at the same time to accessibility from the metropolitan area (ensuring the presence of the Aurelia/Highway/Railway infrastructural corridor) and the declination of a diversified offer of territory moving on two parallel but strongly interconnected levels:

- on the one hand, by outlining assets of consolidated settlements and favouring redevelopment and saturation of recently formed, often fragmented and incomplete fabrics
- on the other hand, defining rules and criteria for future location choices according to new possible ways of distribution of building rights to be concentrated in the availability of the municipal administration; a subsequent 'reward distribution' is hypothesised for concentrated intervention proposals capable of reducing soil consumption, bringing new quality and environmental sustainability, and generating public resources.

In order to govern territories of settlement sprawl, it is necessary today to redefine an approach to the project that takes into account the peculiarities of these territories and intervenes through actions of re-infrastructure and regeneration at different scales (Ricci L., 2006). An approach capable of holding together the infrastructural, landscape and ecological-environmental dimensions and that must necessarily confront the recovery of those landscape, historical and cultural qualities capable of redefining the sense of places. With this perspective, territory can be thought of and designed as a "network of networks" (Gambino, 2009) by outlining concrete, adaptive programmatic and design scenarios rooted in landscapes, and local identities, which structure a system of ecological-environmental, social, historical-cultural, infrastructural-settlement networks, capable of re-establishing territorial interrelationships in space, time, strengthening the link between territory and community, between nature and culture, integrating different relational dimensions (Oliva, Ricci, 2017).

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