

INFRASTRUCTURES FOR A MORE SUSTAINABLE CONSTRUCTED ENVIRONMENT. THE CONVERSION OF THE N340 ROADWAY ON THE COSTA TROPICAL OF GRANADA (SPAIN)

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The coexistence of nature and artifice in metropolitan contexts is currently an important issue with many possibilities to think about. From the perspective of a transport infrastructure project this reflection should facilitate a methodological evolution, aimed at creating a new technology that understands design as a combination between the demands of citizens, and the spatial offer of the place. This is the case of the N340 roadway along the coast of the Granada province, a territory with a population of about one hundred thousand people that doubles in the summer. Besides tourism, intensive agriculture is the basis of economic development. However, the lack of both rail connection and through the 'Autovía del Mediterráneo' has allowed today a space of more than 50 kilometers of coastline with very different conditions we might call "pre-tourist", without massive urbanization and with a considerable potential for change. This infrastructure is channeling all movements by road of the so-called Costa Tropical with the concentration of the metropolitan, local and even regional flows, which leads to a high congestion, mono functionality, lack of permeability and barrier effect, among others. The completion of the 'Autovía del Mediterráneo' is opening up an amazing opportunity to transform this axis that implies refocusing on the natural character of the coast and highlighting out its ability to pass through urban environments relationally and progressively.

Are we able to rehabilitate insufficient and aggressive urban infrastructures, converting them in to secondary ones in relation to other more powerful and recently built ones and giving them a conciliatory character?

Research that derives from the Master of Urban Planning of Granada, explores the intermodal coexistence of pedestrian and vehicular mobility, the intensification of mass transit systems and interchanges, improving accessibility, incorporating the landscape as a structuring element of space through the visualization of distant territory and comprehension of the environmental network.

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THE OPPORTUNITY FOR THE INTERMEDIATE TERRITORIES

The metropolitan dynamics have permitted understand the urban space from a wider spectrum, a place where “natural” and “artificial” are integrated in a constant dialogue. In these configurations the roadway infrastructures are converted into a central element of mobility and of the multiple activities that depend on them (industrial, commercial, residential, etc.) in these contexts the higher urban density have incorporated figures of regional planning and to the traditional centralized General or Municipal plans in the urban nucleus, going beyond the administrative limits, insufficient to represent the daily residential/working dynamics or the urban identities or territorial realities.

The territorial environments of a rural character, like those situated in the contexts of the Mediterranean coast, of lesser urban identity, could seem to not need a reinterpretation according to these new standards, condemning them to a type of eternal balance and logical decadence. However, in these environments of “low urbanism” it is necessary to reconsider their forms or territorial relations and evaluate the effects of the incorporation of new forms of life and production of “metropolitan” character.

In this manner, reinforcement, reinvention, and regeneration of local identities should be accomplished while keeping in mind that different cities or municipalities form part of larger urban entities and should participate in a collective idea as such. The medium sized cities or the environments that the P.O.T.A. defines as “Networks of Medium Cities”, not only as articulators of distance between the regional or metropolitan centers and the rural enclaves, but also finding in the vision of two, or three, or the group, reasons to share, collaborate and cooperate with the objective of maximizing resources, building connections, reinforcing cohesive territorial projects and improving the landscape.

THE COSTA TROPICAL, A POLICENTRIC AND LINEAL URBAN SYSTEM

The tropical coast of Granada is one of these forgotten territories in the Spanish panorama, in which its vitality is maintained without planning or a framework strategy, and the subsistence is based on the proposal of new forms of agriculture and/or tourism in spite of its obsolete infrastructures. Thus, without a model for regional planning, the land has been occupied with tourist apartments or greenhouses.

In the coast of the province of Granada, almost 20 municipalities have constituted a “Municipal group of Costa Tropical townships of Granada”. This is a territory with a collective population of approximately one hundred thousand stable inhabitants, in which the most important economic activities are tourism, agriculture and agro industry and services. The principal populations are Motril, Almuñecar and Salobreña, although each one of them are on a scale that is responsible for specific territorial spaces (Molvizar, Castellde Ferro, Albuñol...).

In this environment the nucleus are extremely weak and the lack a vision of the whole where they consider themselves part of a greater territorial system. Understanding the Costa Tropical as a metropolitan urban unit, but as a rural metropolis characterized by their agricultural activity is an opportunity for a change in the territorial model.



The case of the province of Granada is paradigmatic. The lack of connection by train and by highway has permitted that today we find ourselves with a space of 50 kilometers of coast in very different conditions that we could call “pre-touristic”, without massive urbanism and a considerable potential for change.

However, this is not a protected natural space but rather a territory where the large scale tourist sector has decided not to implant itself. The necessity to exploit hours of sun, the lack of rain and the inexistent industrialization characteristic of Andalucía, has caused this area to consolidate in the last three decades into a type of intensive agriculture based on greenhouses.



N-340, FROM HIGHWAY TO STREET FOR A SUSTAINABLE TERRITORY

The urban system of the coast is articulated by the N-340 highway, which gives access to the nucleus of the agricultural Vegas, gradually changing into a central street of territorial dimensions in which the pedestrian flows coincide with commercial traffic (trucks) exporting agricultural products. The saturation of the N-340 has brought the construction of a highway parallel to the previous one on the interior side, and although the direct exit to Almeria and the connection to the Mediterranean corridor is now possible, there has yet to be an effect on the territory.

The incorporation of the Highway will unload the N-340 of the long distance traffic and reduce the amount of transport traffic, which will open a new stage for this roadway as an urban axis. This supposes a multiplication for the interexchange with its environment and therefore its functional and collective possibilities. The study on the metropolitan area of Oporto done by CEAU of Oporto, manifests the importance of the collective role these axis play on the mobility of urban dispersion. *“Normally, the reinforcement of the axis supports and reinforces a network of centralities where the “central condition” occurs in diverse forms, in terms of the profile of the specialization, in urban form terms.”* (Portas, 2007)

METHODOLOGY AND EVALUATION OF THE PROJECT

From the docent activity of the Department Urbanism and Territorial planning at the University of Granada, the characteristics of this territorial environment has been studied through many academic courses, considering the capacity of the N-340 to articulate a more balanced territory. In this way, projects that show multiple possibilities for transforming the Costa Tropical in favor of a more sustainable territorial model have been developed, through the redefinition of this principal articulating axis.

An evaluation of the characteristics of this infrastructure, local and territorial activities and the place as a geographic context are presented in Table 1. The weaknesses and strengths of the territory are evaluated, understanding both as principal potentialities on which the project is developed. Through this methodology objectives are identified and actions determined (see Table 2).

The cartographic tool permits the interpretive manipulation of the territory and offers a new look into the infrastructure. In the Guadalfeo delta the infrastructure is on one hand a fracture of the transversal relations of the coast, but on the other hand give unity to this territorial entity, putting Salobreña into contact with Motril. (Fig.1)

A CENTRAL ARTERY FOR THE TROPICAL CITY

The section of the Granada coast between Almuñecar and Motril, the reflection in terms of the urban and territorial project proposed a transformation of the N-340 highway into a metropolitan road, into the 340 street with a new “urban” character. Two predicaments were identified with this, “territorial doors” and “urban borders”, where the project actions are defined for each situation.

- The transversal waterways are reinforced with new infrastructure, sports areas and new types of housing. In these points the infrastructure enters into dialog with the territory and its geographical traits become visible.
- Increase the transversal permeability in the urban sections through the complementary lateral roads that permit access and reduce velocity.
- Soften the borders of the highway in rural zones, with the agricultural landscape and favor a crossing of secondary roadways.

Workshop methodology	
Phase 1	RECOGNITION OF THE STUDY AREA- LOCATING OPPORTUNITES AND CONFLICTS (DIAGNOSIS)
Phase 2	FORMULATING OBJECTIVES + STRATEGIES + PLANNING ACTIONS
Phase 3	PROPOSAL DEVELOPMENT

Table 1. Working Methodology for the second workshop.

PROBLEMS	STRATEGY	
	Objectives	Actions
<p>Lack of <i>permiability</i> or integration of the National Highway with the territory that it crosses.</p> <p>The lack of <i>transverse</i> conections of the highway with the Coast.</p> <p>The peculiar <i>topography</i> that complicates the infraestructre connections and urban development.</p> <p>The absence of continuity of <i>sidewalks</i> and other pedestrian features.</p> <p>The lack of <i>public space</i> and the infravorization of the natural surroundings.</p>	<ol style="list-style-type: none"> 1. Improve the entries into the urban nuclei. 2. Provision of mobility equipment that facilitates the internal connections between the nuclei. 3. Detection of strategic points like highway nodes for the possible landscape, commercial or polvalent developments. 4. The recogintion of the sea as a territorial characteristic. 	<p>Provide public spaces and landscapes on the highway and in urban nuclei.</p> <p>Generate interest points and signs for entertainment and tourism.</p> <p>Develop bike paths as alternative means of internal mobility.</p> <p>Improve the pedestrian walkways.</p> <p>Relocation of strategic and adecuate bus stops that correspond to the change in the National highway.</p> <p>Assign new land uses.</p> <p>Incorporate passages that reenforce access to the sea from the National highway.</p>

Table 2. Territorial Diagnosis. Evaluation of Project problems and strategies.

Within the proposed actions, the proposal for various nodes or “territorial nodes” needs to be scaled down at observation scale and strategies and the directives presented in a specific manner.

“Territorial entries” will be configured in determined sections that consolidate strategic points from those that lead to important territorial areas by different means (different transport, velocities, intentions...). Alternative itineraries can be established from them that permit the appreciation of the landscape at different velocities, together with the reform or regeneration of natural elements with soft solutions. The spaces that connect these itineraries and the “340 street” arise as *spaces for opportunity* that create the necessary energy for a landscape reconversion and the prominence of the highway.

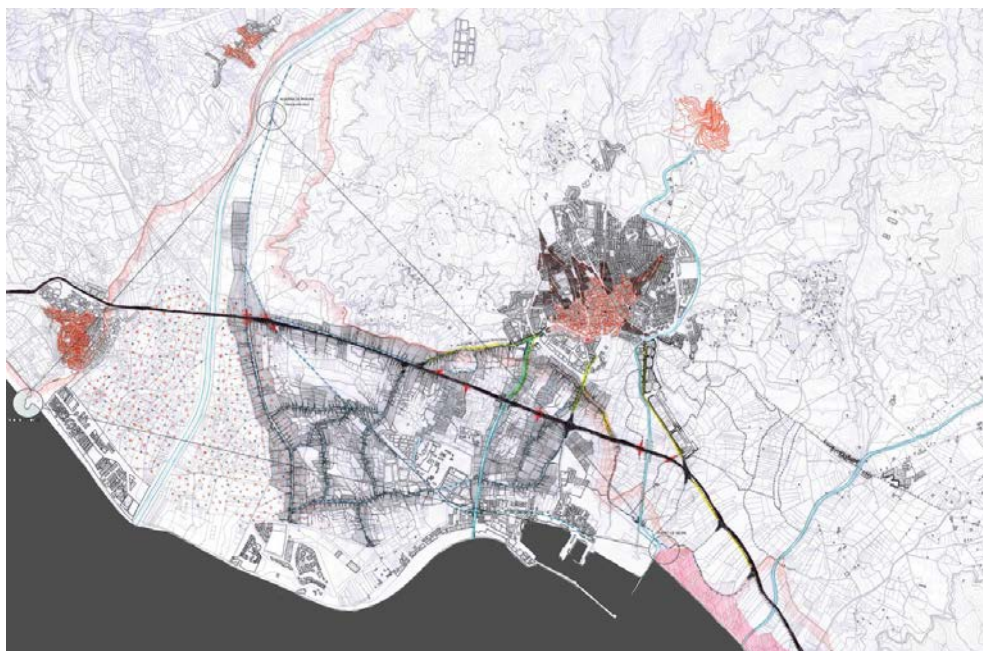


Fig.1. The Guadalfeo delta crossed by the N-340, between Salobreña and Motril.
(Urbanismo 4; Autores: Emilia Navarrete, Violeta Corral, Estefanía Droguet)



Fig.2. A central artery for the Tropical City. Urban border of Almuñecar.
(Máster de Urbanismo; Autores: Ana Montalbán, Ana Alfaro, Ignacio Oller)

CONCLUSION. THE SECOND LINE.

A superior ordering structure to the existing Tropical Coast and the finalizing of the Mediterranean Highway, would signify an increase in the scope of the always successful beachfront. Introduction to the towns of the valleys immediately to the interior of the coast through the territorial entries along the 340 in the territorial system that shares the landscape, touristic, economic and functional patterns of the collective coast is a way to reclaim their unique position between sea and mountain.

The potential for “secondariness” in this case is founded on a connection with its own logical growth, the compatibility between the continuity of the axis and the singularity of each town or position in the itinerary. It is, definitively, the occasion to generate a “city” and also “territory” in the territorial doors that are located on the “costal street” and intention to develop a new, wider and more diverse roadway order that enriches and articulates the costal condition.

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