

Planning and building a South-European eco-neighborhood: From concepts and strategies to practices and assessment tools

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Summary

This paper overviews and criticizes eco-neighborhoods in Southern European countries which are governed by “urbanism tradition” in spatial planning system (ESPON,2005), thus having developed a special culture in territorial development. This tradition combined with special land ownership status creates organisational, investment, financial and governance specificities and constraints of implementation in these countries which mostly influence the development of eco-neighborhoods. The purpose of this paper is to explore aspects of a Southern European eco-neighborhood ‘model’ and a corresponding assessment tool taking account current economic crisis. Analysis of several examples shows that concerning principles, emphasis is given to land ownership, community involvement, investment, and social resilience related problems and specificities. As far as processes are concerned, emphasis is given to the use of efficient energy and microclimate improvement techniques and to urban regeneration projects rather than new eco-developments. The paper concludes with a new tool, entitled “SDMed eco-neighborhood” which is inspired by the territorial capital (OECD,2001) and the territorial cohesion concepts.

1. Introduction

An Eco-Neighborhood is an urban neighborhood designed to minimize its impact on the environment and generally aimed at achieving at least energy self-sufficiency, while also looking to reduce its environmental footprint. For the last twenty years, a number of major Northern European metropolitan areas, such as Copenhagen (Denmark), Freiburg

(Germany) or Beddington (Great Britain) have been engaging elected officials and citizens to come together to reflect on a still-to-be created

social model. These cities are now home to neighborhoods that stand out from others by the way they incorporate various sustainable development components: Concretely, the idea is to apply at the urban neighborhood level certain environmental and social principles in order to control the impact of urban establishments. These principles are based on certain elements, such as social blending, economic efficiency, public areas designed to foster interaction, and technical solutions respectful of the environment, in particular rainwater and energy recovery. These neighborhoods stand out for their comprehensive approach, based on early participation of all stakeholders. The conception is broad and systemic, working from the assumption that a single technology cannot resolve all the problems encountered.

Eco-neighborhoods are subject to increasing interest, resulting in the proliferation of articles, visits and exchanges of information about them. Often circulates the idea of exemplary achievements in the countries of Northern Europe, as a counterpoint to a spontaneity and a delay on the subject in Southern European countries. Even if the ambitions and goals set for the above eco-neighborhoods vary from case to case and each experience is a special case [1], one can conclude on some common characteristics thus enabling to distinguish certain typologies and speak about a North European model [2]. The paper attempts to specify a possible South European model of eco-neighborhood, by presenting some already elaborated methodological tools and experiences from implemented projects in Mediterranean countries and specifically in France, Italy and Greece. A main conclusion of the paper is that what is basically important in creating an eco-neighborhood is the maintenance or creation of a real cohesive neighborhood that is characterized by attractiveness thus ensuring well-being, social cohesion and spatial equity.

2. About the eco-neighborhood typology in Northern Europe

A meaningful typology of eco-neighborhoods has been drafted by Taoufik Souami [2]. He has distinguished three phases of eco-neighborhoods' creation, in less than two decades. The initial eco-neighborhood type of the 80's was often a kind of eco-village transformed into neighborhood. During the 90's some communities, taking advantage of exceptional urban events, initiated sustainable districts on their territory: World's Fair in Hanover, B01 exhibition in Malmö, London Olympics, Olympic Games bid in Paris, Zaragoza's candidature for EXPO 2008 that initiated the "Ecociudad Valdespartera"... These events have been all opportunities to initiate positive processes that go beyond conventional practices, showing ambitious environmental goals. The projects are accompanied by a important work of communication, especially towards internationally and are developed as exemplary successful demonstration projects addressing both to technicians and local politicians. Innovative and broadly applied technical solutions (systematic recycling of rainwater, deployment of extended solar panels, photovoltaic panels...) are being implemented and technicians and policy makers have the opportunity to test, validate and correct certain choices. These projects are also considered as places that promote learning on integrated territorial development strategies [3]. From the mid-90s a new type of eco-neighborhood appears based on environmental quality criteria They are initiated in a conventional mobilising ordinary

tools of development and construction but they integrate environmental quality objectives. These districts adopt common and unexceptional production methods in order to integrate sustainable development perspectives. Some of them clearly refer to the achievements of the so-called European “vedettes” of the 90’s.

3. Is there a South-European model of eco-neighbourhood ?

The north-european model is mainly described by its technical and environmental performance in terms of energy, saving water or recycling materials. They seem to be the main mechanism to move from principles to the effective implementation of sustainable urban development. The urban planning and design and the implementation of networks are resulting from this approach. This model governed by the environmental approach and its performance is mainly used by communities as a powerful tool of communication, promoting the region and even as leverage to reverse social and economic depreciation. However, these social and economic aspects are not sufficiently highlighted and are not explicitly included within the agreed content of the model. On the contrary, Southern European countries and especially the Mediterranean seem to prefix social, economic and governance issues and less attention is paid to environmental performances at least from the point of view of their initial definition and specification.

3.1 The case of France : relative delay, centrally directed generalisation, focus on societal issues

In France, many cities have been engaged recently in the process of sustainable neighborhoods. Most of the projects are being actually studied and implemented, so their status does not allow to evaluate the results and present a meaningful analysis. In addition, the famous “Grenelle de l’ Environnement” in France has proposed to initiate a plan of voluntary eco-neighborhoods driven by local governments: at least one eco-neighborhood in all municipalities that intend to realize programmes of housing development until 2012 (in continuity with the existing urban texture and integrated in the city master plans) and fifteen large-scale projects of energy, architectural and social innovation, while the release of growth will be creating by 2012 through the creation of ten “Ecopolises”, that is cities of at least 50,000 inhabitants integrating environmental quality and new information and communication technologies (“Attali” commission). Moreover, three relevant competitions have been announced in 2008 and 2011 by the Minister of Ecology, Energy, Sustainable Development and Planning. These centrally directed processes in cooperation with local authorities highlight already major projects and underline the fact that the phenomenon of eco-neighborhoods is widespread in France and building resilience is ongoing for these innovative projects of urban development. Moreover, the HQE Association has recently presented a guide of how to integrate the HQE in urban projects, produced in collaboration with numerous partners. This guide is based on existing good practices and has been subject of experimentation since 2006 in 10 pilot community projects [4]. The approach aims to ensure that all environmental, social and economic concerns are handled by developers and should allow private or public developers to monitor the project so that it incorporates all concerns and all stakeholders likely to be involved: professionals, residents, technical services of the community. To note that the design of eco-neighborhoods in France gives emphasis on the social dimension of the

outputs [5] even by means of the rebirth of the cooperative movement, which is evident from the beginning of 2000 in France.

3.2 A programme of interregional cooperation stresses the interest on a mediterranean eco-neighborhood model

The overall objective of the MED-Ecoquartiers project carried out in the frame of the Medocc-INTERREG IIB, based on a European regional partnership, was to produce a common methodology in order to serve as a set of principles for the creation of new neighborhoods that are consistent with the principles of sustainability (planning, building, energy, mobility, quality of life, activities, natural resources, historic buildings and landscape) in the countries of the Western Mediterranean. It grouped the cities of Pezenas (eco-Saint-Christol 29 ha for 1700 inhabitants), Dos Hermanas (Spain, eco-neighborhood Montequinto for 12,000 inhabitants), Faenza (Italy, eco-district of San Rocco 350 dwellings for 1,000 inhabitants), Elefsis (Greece, eco-neighborhood of 88 apartments on 3 hectares).

3.3 An Italian project focusing to strategic spatial planning

Under the hypothesis that “there is no a unique Mediterranean city, but only many different Mediterranean cities” and looking for describing as much as possible the Mediterranean diversity, the Italian partners of the Med-Ecoquartiers Project have elaborated one of the most significant examples in St Rocco neighborhood in the City of Faenza. The San Rocco neighborhood project in Faenza addressed the two fundamental issues for the construction of new neighborhoods; the first one related to land use and consequently town planning, while the second one related to experimental aspects, implementation techniques, the use of materials and innovative technology that can improve the overall quality of the ecosystem. The San Rocco neighborhood seems to be totally oriented towards the “relationship style of planning”, even though a great deal of attention has been paid to the physical product, if only to ensure environmental sustainability. The experimental planning and building of the San Rocco neighborhood bridges the gap between product focused and relationship focused planning and is strongly Mediterranean in culture. Residents’ involvement was also enhanced. Another useful conclusion deriving from the Italian Project is that a Mediterranean eco-neighborhood results from strategic planning. (Nonni, Laghi, 2008) [6]. The project is a strategic planning one with people and their relationships at the centre.

3.4 The greek eco-neighborhood projects

Eco district ideas are still in their infancy in Greece, despite a boost in green development initiated recently by the government. There is no real “eco-neighborhood” implemented in Greece and many questions need to be answered on the way to implement eco-neighborhood projects in the country. Nevertheless, Greece has participated in the Med-Ecoquartiers through a project to construct 88 housing units in the city of Elefsis. The project carried out by the Workers’ Housing Organization, an public institution that since its inception in 1954, is responsible for the construction of social or workers housing dwellings, but the Elefsis project was already in construction phase which is a fact that has hampered the implementation of the Med-Ecoquartiers tools. They only contributed to a partial modification of the original design and improved the environmental performance of the project in some areas (see Figure 3). However, the involvement of the Organization in

the Project has contributed to a broader learning process to the extent that achieved awareness and knowledge around the question of eco-neighborhoods has had a replication effect through the adoption of the criteria introduced by the programme to other projects managed by the same organization : a new settlement in Iasmos (Rodopi) has been designed as a pilot village for implementing as much as possible the methodological tools produced by MedEcoquartiers and major part of the sustainable planning was the consultation between the various stakeholders, the local government and the residents in order to build the necessary resilience[7]. Moreover, the Organization has announced a European architectural competition in collaboration to the Greek Institute of Architecture (EIA) regarding the design of a new social housing settlement with environmental design strategies.



Fig. 1 Master Plan of Elefsis



Fig. 2 Result of the application of the «Med Eco-quartiers» working tool in the Elefsis Project

3.5 “Green neighborhood” projects in western Athens

The most recent attempts to develop eco-neighborhood projects in Athens is the one led by the Ministry of Environment, Energy and Climate change and the Centre for Renewable Energy Sources (CRES) in the depreciated and low-income area of western Athens, namely the municipalities of Aigaleon and Aghia Varvara. Nevertheless the scale of the projects is too small and no real sustainable approach can be implemented. In fact, a block of 4 social housing buildings has been chosen to serve for the pilot implementation of both zero energy buildings and an interior urban oasis as well, to improve microclimate conditions. The ministry is also attempting to use a particular public-private partnership scheme, through voluntary agreements with small construction enterprises which can provide construction materials and building products to affordable prices. Another remark that has to be made concerns the failure of a firstly launched project in Aigaleo due to the non capacity of the local authority to fully understand the project and find the necessary institutional tools to cope with the land and buildings ownership related constraints.

As fas as the Aghia Varvara project is concerned, both on-site visits, use of interactive questionnaires and data collection From the Public Power Corporation confirmed the need

for interventions in buildings in three key areas: The first one concerns exterior insulation of the building shell, replacement of old simple glazed window frames with double glazing, replacement of old blinds and use of cold paintings. The second axis is to replace the various heating and cooling systems with an energy efficient central heating and cooling system. Finally, ensuring hot water through a central solar system is the third axis of the operation.

The programme is aiming at maximising energy efficiency of the neighborhood, achieving thermal comfort for residents and improve significantly their quality of life and at the same time minimise environmental impacts.



Fig. 3 Social housing apartment buildings in western Athens



Fig. 4 The urban tissue of the projects

3.6 Private eco-developments in high-income suburbs, focusing on marketing

Private projects can be often met in the Mediterranean area as they concern the creation of eco-villages either of secondary residences and touristic complexes or high income level housing in prestigious suburbs. In these projects, innovation and marketing for commercial reasons are usually prevailing. An example of such a development is the “Designer Village” developed by a private construction company in Dionysos, on the foothill of the Pendeli mountain. The project concerns the development of 85 plots in which 240 dwellings are being erected. Each plot has approx. an area of 1500m². In an attempt to use green marketing tools, nine greek architectural cabinets of different architectural perceptions and tendencies have been invited by the construction company, to put down their inspirations. “Designer Village” is already referred to as a kind of park of exemplary Mediterranean architecture, characterized as an “excellent project” by an EC programme competition. It focuses on energy efficient techniques and improvement of thermal and visual comfort and indoor air quality. Although the environmental objectives and targets associated with the rational use of resources (energy, water etc) are ambitious, the complex is far from being characterised as eco-neighborhood since it doesn’t promote neither social mixing, nor economic efficiency, accessibility and affordability or cooperation among inhabitants. In conclusion we would say that an eco-neighborhood may be regarded as such only if it is the result of social dynamics and not a simple consumer product [7].

4. Eco-neighbourhood tools

Many tools have been developed globally which assess the projects either pre design or post design. It is useful to briefly mention them as well as their main characteristics, since a creation of such a tool specified according to the south European specificities and characteristics is pursued.

4.1 The DPL approach

DPL is an approach for sustainable urban planning that quantitatively measures the sustainability of urban areas (districts) based on 25 environmental, social and economic indicators (Planet, People, Profit). Planet indicators are subdivided into two categories namely, stocks and local environment. People indicators are subdivided into four categories namely, safety, services, green space water and quality. Profit indicators are subdivided into three categories namely, economic vitality, sustainable businesses and capacity change. DPL was developed by IVAM in cooperation with TNO Environment and Geosciences and with financial support from the Dutch Ministry of Housing Spatial Planning and the Environment (VROM).

4.2 The LEED for Neighbourhood Development Project Scorecard

The tool is subdivided into five categories. Each of them has several analysis criteria, which are either prerequisite or are being given a score. The main categories are Smart Location and Linkage, Neighbourhood pattern and Design, Green Infrastructure and Buildings, Innovation and Design Process and Regional Priority Credit. The tool, similarly to LEED for buildings, calculates a certification estimate and gives five total scores, namely not certified, certified, silver, gold and platinum.

4.3 The Eco Town framework by the Cambridge Quality Charter of Growth

The Eco-Town framework focuses on state of the art green building, energy and transport technologies and materials to be used in an urban development context. The task is to ensure zero-carbon housing and that energy efficiencies are achieved through waste reduction, energy conservation technologies and use of more sustainable sources of energy. The Eco Town approach refers to new settlements with a minimum of 5000 homes where the developments should reach zero carbon standards should provide good range of facilities and affordable housing. The framework consists of four fields, the four Cs, namely, climate, connectivity, community and character. Each one of the four is subdivided in several criteria.

4.4 The Bioregional One Planet Living framework

This framework consists of ten principles which are aiming to accomplish sustainable communities, namely, zero carbon, zero waste, sustainable transport, sustainable materials, local and sustainable food, sustainable water, land use and wildlife, culture and heritage, equity and local economy and lastly health and happiness. This approach is a very simple one and can be used to help individuals and organisations to examine the sustainability challenges that they face, and to develop appropriate solutions. This simplicity makes it a very easy to use tool by every stakeholder.

4.5 The HQE2R approach

The method focuses on evaluating a draft urban renewal for local authorities and their partners. The method proposes five objectives. Each of them is divided into indicators, which are 21 in total. The objectives are the preservation and enhancement of heritage resources, the improvement of quality of the local environment, the possibility to ensure diversity, the improvement of integration and the reinforcement of social life.

4.6 The Med Eco-Quartiers tool

The objective of the Med Eco-Quartiers Project was to define precisely the criteria and tools for creating eco-neighborhoods in the Mediterranean region, by studying different cultures, procedural approaches and environments. As part of the project four working tools were developed that range from the phase of project design to the realisation phase. The four tools are Med Eco-urbanisme, Med Eco-constructibilité, Med Eco-gouvernance and Med Eco-sensibilisation [7].

5. Discussion- Conclusions

5.1 What would be the model of a Southern European “eco-neighborhood” nowadays ?

The study of a series of eco-neighborhoods in Southern European led us to the conclusion that a SE eco-neighborhood model is emerging. The South European experience shows that eco-neighborhoods are neither merely expressions of integration of sustainable development in city planning nor only products integrating new technologies and alternative energies, enrichment of biodiversity and prudent and rational financial management.

The eco-neighborhoods, as developed in Europe are, in our view, important local aspects of strategic spatial planning, as this is reborn and reshaped today in Europe, thus being products of a dynamic political and social process. Eco-neighborhoods are manifestations of the change of regulatory planning (based on physical planning) to a territorial management process where “territorial marketing” has a predominant role [3]. They reaffirm, moreover, that sustainable development is a unique unifying element and point of recasting spatial policies. Sustainable neighborhoods are also emphasizing the issue of scale which is nowadays one of the most important theoretical discussions in spatial and urban planning. Another important conclusion is that an eco-neighborhood mainly depends on the extent to which there is a tradition of strategic spatial planning, on the cultural tradition and level of collective and community involvement [9] and on the presence of catalytic investments and the possibility of implementing public - private partnerships [10]. The Mediterranean countries largely lagging behind as far as the above conditions- that may provide a guidance for building a Mediterranean model-. are concerned, present a spontaneity and a delay of implementation. Constraints of implementation show that an eco-neighborhood initiative should be based on adaptive and flexible governance schemes, that is bring together community stakeholders, property developers, utilities, and the city to solidify a shared sense of purpose and partnership through the following actions: a/ Establish municipal policy and organizational structures to support the eco-neighborhood development; b/ Create an engagement and governance strategy to build community support, set priorities and actions; c/ Develop an assessment and management toolkit (with all the preoccupations described in this text) to guide project development and track ongoing performance;d/ Identify commercialization opportunities for the private sector to test promising products and practices; e/Implement sustainability projects through technical and economic feasibility analysis, assembly of project financing, and establishment of public-private partnerships;[11]

Both lessons from the North-European examples of eco-neighborhoods and observation from different types of eco-developments in Southern Europe (public or

private projects) can provide helpful criticism and a good framework to discuss issues of efficient implementation in the near future. This framework could help to modeling work that is to the construction of a model that can help to predict future trends and to the affirmation of the model, meaning that it can be used in the reproduction and replication of certain practices and related projects.

5.2 What would be a suitable sustainability assessment tool for Southern European “eco-neighborhoods”?

The short analysis of the eco-neighbourhood design tools has shown that they have different orientations in terms of their focus on environmental, social or economic strategy. Some of the tools seem to be more design oriented while others have a social resilience focus. The Eco-Neighborhood is more than a mere buzzword or local marketing tagline. The neighborhoods have ambitious targets that go well beyond load reduction. They draw upon new and often complex practices, from urban project design to construction, use and assessment and it is often complicated for the local authorities to implement these practices as new methodologies need to be addressed and many of them recoil at doing so, from the very start of the project. The above described experiences in Southern Europe show that an assessment tool for eco-neighborhoods cannot be efficient if not directly linked with the valorization of the territorial potential and the territorial capital (OECD,2001), at local level.

We have therefore proceeded to the formation of a new tool, largely inspired by the territorial capital and the territorial cohesion concepts, which gives emphasis to the holistic approach of the city and its neighborhoods and its relationship and interdependence with its region. The so-called “SDMed eco-neighborhood” tool is structured around the main determinants of the territorial capital (geographical, cultural, political, material, social and intellectual capitals) and is analysed in a series of criteria capable to manage the complexity and diversity of the Mediterranean urban phenomenon [8].

The concept of territorial capital was first proposed in a regional policy context by the OECD in its Territorial Outlook (OECD, 2001), and it has been recently reiterated by DG Regio of the European Commission : “Each Region has a specific ‘territorial capital’ that is distinct from that of other areas and generates a higher return for specific kinds of investments than for others, since these are better suited to the area and use its assets and potential more effectively. Territorial development policies (policies with a territorial approach to development) should first and foremost help areas to develop their territorial capital” (European Commission, 2005). Territorial capital is referring to the following elements: a/ a system of localised externalities, both pecuniary and technological; b/ a system of localised production activities, traditions, skills and know-how; c/ a system of localised proximity relationships which constitute a ‘capital’ – of a social psychological and political nature – in that they enhance the static and dynamic productivity of local factors, d/ a system of cultural elements and values which attribute sense and meaning to local practices and structures and define local identities; they acquire an economic value whenever they can be transformed into marketable products – goods, services and assets – or they boost the internal capacity to exploit local potentials; e/ a system of rules and practices defining a local governance model. Accordingly, the OECD has rightly drawn up a long list of factors acting as the determinants of territorial capital, and which range from traditional material assets to more recent immaterial ones. All the above have been used to draft the SDMed Ecoquartier tool.

Table.2 . The conceptual elements behind the SDMed Ecoquartier tool [8].

TERRITORIAL CAPITAL	TERRITORIAL COHESION COMPONENTS
GEOGRAPHIC	EMMISSIONS
	LANDSCAPE RESOURCES
CULTURAL	CULTURAL HERITAGE
POLITICAL	GOVERNANCE
MATERIAL	ECONOMIC GROWTH-WEALTH
	RESOURCES
	SUSTAINABLE TRANSPORTS-MOBILITY
SOCIAL	HEALTH AND SAFETY
	EXTERNAL ACCESSIBILITY
	INTERNAL CONNECTIVITY
INTELLECTUAL	CREATIVITY

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