

Paola De Joanna, Dora Francese,  
Antonio Passaro (edited by)

# Sustainable Mediterranean Construction

**Sustainable environment  
in the Mediterranean region:  
from housing to urban  
and land scale construction**



Ricerche di tecnologia dell'architettura  
FRANCOANGELI



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FRANCOANGELI

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## *Preface*

D. Francese<sup>1</sup>

This essay contains the Proceedings of the I SMC, International Cittam Conference on “Sustainable environment in the Mediterranean region: from housing to city and land scale Construction”, held in Naples, at “Centro Congressi Federico II”, from February 12<sup>th</sup> to 14<sup>th</sup>, 2012. It gathers the contributions, in the shape of single papers, written by the participants to the conference itself, and defined suitable to be published after a long process of Control, provided by a Double Peer Review procedure with a Blind verification, by means of a provided Assessment sheet, processed on purpose and filled by two different and anonymous Referees, chosen among the experts in the relative topic. The Local Scientific and the Organization Committees of the conference, following the meetings for the abstract selection, had transmitted the aforesaid Assessments for each paper to the Author/s with the positive or negative acceptance and possible integrations or corrections to be made. Once this process had been completed, the papers had been accepted and thus here published after the oral or poster presentation to the Conference days themselves, and/or by means of the regular registration.

<sup>1</sup> Chiarman of the Conference.





# *Sustainable construction in the Mediterranean region*

D. Francese

Fully immersed in the worldly crisis, the European countries look for a possible escape by exploring their roots, their past and traditions within the history, the geography and the art.

This answer cannot be found rapidly, being the path long and twisting, and the obstacles, created by both the human diffidence and the political-commercial interests, hard to overpass and eliminated.

Mainly the particular task carried out by the engineers, the architects, the planners and all the other professionals involved in the transformation of land and city would be supportive, as long as a number of principles will be respected and any of the applied actions be addressed to the protection of environment and territory.

These notes are meant to introduce the research lines of a number of expertise who wish to achieve the aim of improving the environmental sustainability within a particular region: the Mediterranean area; the latter has been chosen as field of studies, for two main reasons, one of which is the obvious fact that the team promoting this subject is settled in the middle Mediterranean, in south Italy, and the other is the fact that this district can be considered as a launching spot for creating new network systems.

In fact the emerging trend, in this historical moment, of the Mediterranean area from the strategic viewpoint as union rather than competition bridge between Europe, Africa and Middle East, creates the need of thinking about the existing constructions, present all over the great number of countries which face this sea. The reflection about these present trends leads to wake up ancient communions of intents and cultural roots among the various populations and to focus on the need of a cultural consciousness within the citizens' souls about the importance of safeguarding the built as well as the natural heritage, by means of sustainable development strategies.

Moreover within the architectural lines, the engineering techniques, the planning and settlement organisation, established in the roots of Mediterranean traditional culture, a number of principles similar and in line with the sustainable development and ecological aims have been found, and can be deeply investigated so as to define a common strategy for founding different models of living in the city as well as in the country. Examples of these similarities have been discovered in the bioclimatic response of buildings to the weather and environmental conditions, in the modalities of materials employment, and also in a great number of social, technical and cultural human activities.

According to this belief the following pages and papers - here published - had recorded the contributions come from a number of intellectuals and experts from the research centres, the universities and the professional fields of the Mediterranean region, who had gathered in Naples so as to create a network of people desiring to make a change and to apply various approaches, strategies, projects and technologies aimed at improving human's way of life on the planet, and in particular in this area.

As it is very well known, the amount of resources on our planet are going to be depleted very soon, mainly those who need to be pure and clean, such as water, food and air; number and number of conferences, worldly summit and meetings in the high areas of government and management have been held during the last two decades around the themes of sustainable development, pointing out the need of moving our society towards a different economy and a different way of reflecting on the possible transformation of land and city. Such terms as "green economy", "smart cities", "emerging technologies" and others have been created so as to clarify the various opinions and movements which can help during the establishment of this new society. The ecological footprint (EF), the indicator created by Mathis Wackernagel few years ago, has now become the way of measuring the level of man's impact on earth: given, in fact, that the available amount of resources on earth (soil, food and material, energy), i.e. the *Bio-capacity*, has been calculated as land equivalent amount of 1.8 Hectare per person, thus the countries that have an EF superior to the Bio-capacity are actually debtors, while the countries that create an EF minor than the Bio-capacity are instead creditors. This situation brings the world countries into a very disparate situation regarding the actual fault in providing pollution over the planet, and needs to be considered during the evaluation of richness and importance of any countries within the global assessment of countries' power and rightness to decide for the whole; presently the globally accepted criteria are the opposite ones: the countries, considered the rich-

est, are those which impact more: i.e. consuming more resources and producing more pollution, devastating the globe reserves of pure air, clean water, uncontaminated soil. In order to reverse the situation a number of economic actions had been developed, as for example the “polluting tax” which can push the rich, dirtying and invasive activities of men’s economy either to reduce their pollution and use of prime matters (energy, materials, water, soil, air....) or to pay more taxes, and thus to contribute to the funding for depurating, purifying, sanitizing and clearing the contamination.

As far as Mediterranean and European countries are concerned, even here the situation is very unbalanced: in the graphs of figure 1 and figure 2, it can be noticed that most of the countries of this region have overcome this limit, are debtors and are employing more than it is possible.



Fig. 1 - Ecological Footprint (EF) of Italy (after Wackernagel 2000)

Fig. 2 - Ecological Footprint (EF) of some Mediterranean countries (after Wackernagel 2000)

While in fact the Italian Ecological Foot-print has been calculated in 3.8 Hectares, the French in 5.7, the Portuguese in 5, the Spanish in 4.8, the Greek in 5.5, the Romanian in 3, the Jordanian in 2, the Libyan in 3.4, and thus are debtors for the fact that they consume and pollute more than it is possible for each of them (1.8), on the other hand the Egyptians (1.8), and the Moroccans (1.2 He) can be considered as creditors because they consume and pollute less than it is them allowed<sup>1</sup>.

<sup>1</sup> The data about the EC “Ecological foot-print” of the world countries is taken by the “WWF, Living Planet Report 2001”, and reported by “AAVV Economia e Ambiente, EMI edition, Bologna 2005”. If one looks at the whole reported data, an important element is that of the major providers of EF, such as the USA (6) or Kuwait (8.5), and so on ( see M. Wackernagel, *Il nostro pianeta si sta esaurendo*, in AAVV, “Economia e ambiente”, EMI ed., Bologna 2005, pag. 100).

From here the need of embracing new roads for development comes now as an urgent action to be carried out by any operator among the experts and the professionals involved in land transformation.

One of the paths can be recognised in the model of the “De-growth”, which is defined as “.. a policy design ... of constructing, in the North as well as in the South, convivial, autonomous and sober *societies* ...”<sup>2</sup> : it has been lately outlined and already has a number of followers in various fields of the society members, not only in the economic sector but also in the construction sector, in the social sciences and so on. The idea, come out from all the people involved in processing this model<sup>3</sup>, can be summarised in the few words, that Latouche, the very well known French economist, had written in one of his various essays:

The de-growth is not a negative growth. It should be better to talk about “a-growth” as it is talked about “a-theism”. In fact, it deals exactly with the abandon of a faith, a religion, that of finance, progress and development. It has by now recognised that the never-ending searching of the growth is not compatible with a finite planet, while the consequences (producing more and consuming less) are on the other hand very far from being accepted. However, if there will not be a route inversion, an ecological and human catastrophe is expected for us. We are still in time for imagining, peacefully, a system founded on a different logic: that of a “de-growth society”.

One of the means for achieving this aim is that of forgetting the *modern employment of the GDP (Gross Domestic Product)*, as indicator of richness of a country, since it has been demonstrated that it is only able to represent the consumption rather than the welfare and even less the happiness of populations, and another one is that of considering and following the

<sup>2</sup> S. Latouche 2009.

<sup>3</sup> As far as the degrowth model is concerned, a great number of scientists and economists had been dealing with that lately. See for example: Aries, Paul, *Decroissance ou barbarie*, Golias, Villeurbanne 2005 ; Bartolini, Stefano *Come passare dalla società del benessere a quella del ben-essere*, Donzelli, Roma 2010 ; Beitonne, Alain e Navarro, Marion, *Decroissance. Le poids des mots, le choc des idées*, on line (www. Lareveudumauss.com) ; Benoits, Alain, *Demain, la décroissance ! penser l'écologie jusqu'au bout*, Edite, Paris 2007 ; Daly, Herman, *Oltre la crescita- L'economia dello sviluppo sostenibile*, edizioni comunità, Torino 2001 ; Duverger, Timothee, *La Decroissance. En quete d'un capitalisme*, Uniiiversité de Bordeaux, 2010 ; Friedman, Yona, *L'architettura di sopravvivenza. Una filosofia della povertà*, Bollati Boringhieri, Torino 2009; Georgescu-Roegen, Nicholas, *La Decroissance. Entropie, écologie, économie*, Sang de la Terre ed., Paris 1995; Illich, Ivan, *La convivialità. Una proposta libertaria per una politica dei limiti alo sviluppo*, Mondadori, Milano 1974; Latouche, Serge, *Come si esce dalla società dei consumi. Corsi e percorsi della Decrescita*, Bollati Boringhieri, Torino 2010.

worldly initiatives, such as the Directive 20-20-20, the measures undertaken by the European parliament, in the approved energy packet for the 2020; this packet of proposals previews the need for EU countries of reducing by 20% the emission of greenhouse gases, of limited the energy consumption by 20%, and of employing renewable systems for the 20% of the total energy requirements in public buildings; the idea is to generate new techniques and procedures so as to align them with such possible solutions.

If the De-growth is thus a political, economic, and social movement based on environmentalist, anti-consumer, and anti-capitalist ideas, aimed at reducing consumption and maximizing happiness and well-being through non-consumptive means, an application of this model to the present construction systems can be proposed so as to promote less polluting and less foot-printing actions. Thus applying the idea of the Latouche's eight Rs, which are meant as the second stage of the de-growth process, that of "action", an interpretation within the construction sector considers the following measures for each of the R; the first, being the Re-evaluation (which means providing new values to our life) can be split into the various values which the society should, according to Latouche's thought, change, coming back to the important human feelings and way of living. One of these new values, recorded by the economic and social theory as *Altruism*, can be interpreted as "helping weak ones", and thus transferred in the construction sector as the importance of "taking account of social needs": sentence that seems to be obvious for a land transformer, but that lately, particularly among big archi-star and engi-star, had been actually almost completely disappointed, failed and neglected. The second term, the *Cooperation*, socially meant for collaborating rather than competing, can be transferred to the construction sector as the well known idea of "Participating design", which would help during the all life-cycle of a building and any other work for the public so as to reduce the common idea of imposing from the top the decisions, the ideas, the projects, the actions and the buildings. The value of "social life over unlimited consumption" stands for, in terms of social and economic patterns, *voluntary simplicity*, and can be interpreted in the construction language as the need of selecting durable, healthy, economic and ecosustainable products and materials. Another value which has to be changed is the importance of the "Local over global", which denotes mainly the preference for regional products and services: this can create a new application of the bioregionalist concepts to new construction choices, i.e. materials, techniques and design strategies. "Beautiful work over productive efficiency" is another of the values to be revisited by the de-growth approach, which can be clarified from the social and economic view point as a new link for sociality and community and thus ap-