



INTERNATIONAL SBO5MED CONFERENCE

"Sustainable Construction: Action for sustainability
in the Mediterranean Region"

PROCEEDINGS

Athens, 9-10-11 June 2005

Under the auspices of:

The Minister of Development

The Mayor of Athens

The Central Union of Municipalities and Communities of Greece

Co-hosted by:



Supported by:





Venue: CONFERENCE AND TRAINING CENTRE OF THE NATIONAL BANK OF GREECE



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S. Kyvelou



G. Kalkanis, N. Chiotinis, P. Gelimis, Chr. Palaologos



*I would like to thank you for the invitation to address an introductory speech to your International Conference titled "**Sustainable Construction: Action for sustainability in the Mediterranean region**", organised by the **International Association SD-MED**. Allow me to congratulate the organizers, as well as the Municipality of Athens and the Central Union of Municipalities and Communities of Greece, for supporting this exceptionally significant discussion on sustainable development via sustainable construction. The new era characterised by increased requirements and needs calls for the creation of a different model of development. A model with qualitative characteristics, close to the citizen, but also environment friendly. To this end, among other measures we plan to create a new energy model, which will be based on an integrated energy policy with explicit objectives and new parameters: the rational use of energy, the vast use of natural gas and the promotion of renewable energy sources which are abundant in our country.*

A priority aim for the leadership of the Ministry of Development is the adoption of a long-term energy policy with a well determined aim and timetable, as well as the exploitation of all possibilities offered by modern technology. Despite the weaknesses and problems of the past, the Government has already proceeded to a series of actions and measures to make up for lost time, to determine the terms and conditions for a stable and fertile enterprising environment, and to create important investment opportunities and enhance competitiveness in the Greek economy. I am mainly referring to: 1) the new developmental law that promotes the development of new and old enterprises with subsidies up to 55% of the investment, the modernization and the exploitation of new technologies. 2) the issue of a joint ministerial decision in collaboration with the Ministry of Environment, Physical Planning and Public Works, on the installation of small co-generation plants and photovoltaic panels in the urban texture. 3) the promotion of national spatial planning for the facilitation of investments in all the sectors and especially in the renewable energy sources. 4) the decision on the subsidy for the interconnection of RES with the existing electricity network (50% deduction from taxes of EPAN). It is pointed out that in the last EPAN assessment, 44 projects of renewable energy sources were approved (total budget: 110 million Euros). Today, for the use of renewable energy sources and bioclimatic architecture in buildings, 19 projects are being materialized by the EPAN (total budget: 18 million Euros), in which the following categories of investments in buildings are financed: photovoltaic systems, passive systems of heating, cooling and lighting in buildings of the tertiary sector and residential units covering an area greater than 1000m², and central energetic solar systems for the production of hot water for domestic or industrial use or for air heating from solar collectors.

*At the same time, in the Ministry of Development, special committees have been formed in order to deal with the incorporation in the national network of: 1) the directive pertaining to the energy efficiency of buildings based on the successful precedent of energy labeling of domestic appliances, which means that: the sale or the hire of real properties should be accompanied by a certificate showing the energy record of the building. In this way, a powerful motive will be provided for the energy upgrade of the building stock. As regards new buildings, the conformity with the regulations is established covering each particularity of production and use. 2) the directives on the promotion and support of efficient co-production of electricity and beneficial heat with the establishment of suitable institutions of certification of electric energy is produced by the co-generation of high output. We have designated year 2005 as the year of energy saving. Shortly the Ministry of Growth in collaboration with the **Public Power Corporation** and the **Centre for Renewable Energy Sources** will launch a campaign for informing and sensitizing the public on energy saving. Moreover, in order to deal with the acute problem of increased power demand, the first direct measure was published in the JMD, having as objective the*

installation of compensation systems in public buildings, by June 30, 2005. We begin this effort from the public sector, while energy saving costs shall total tens of millions of Euros. This measure shall be implemented in the future in large industrial and commercial buildings.

Citizens should not be mere consumers, indifferent to issues connected with the use of energy; they must be well informed, active citizens using energy with responsibility and consistently participating in a common effort to implement energy saving measures.

Economic development does not necessarily entail energy and environmental burdens. Our goals are all achievable. All together, we can do better. For this reason, I would like to congratulate you for the Conference organization and I am looking forward to its outcomes and conclusions.

Dimitrios SIOUFAS

A handwritten signature in blue ink, appearing to read 'Dimitrios Sioufas', with a long horizontal flourish underneath.

Minister of Development



Welcome greetings on behalf of the hosting Association "SD-MED"

Ladies and Gentlemen,

I welcome you in Athens, in the International Conference SB04MED entitled "**Sustainable Construction: action for sustainability in the Mediterranean region**". This congress constitutes a regional Event prior to the Global SB05 Conference. "Action for sustainability" that will be held in Tokyo, next September. It constitutes, at the same time, a **Euro-Mediterranean co-operation and dissemination action in the frame of the LIFE "SB-MED" Project** concerning "Enhancing transferability of innovative techniques, tools methods and mechanisms to implement sustainable building in the Mediterranean basin. For this reason, this event constitutes a synergy of international range aspiring **to articulate local, national, region-**

al and international initiatives for the promotion of both the idea and practice of sustainable urban environment and more specifically of "sustainable building" and construction. That is to say the building that beyond its classic architectural virtues, beyond its architectural quality implying social, economic and environmental aspirations, it is characterized by the minimisation of its environmental impact, that is, it is mostly characterized by the environmental quality, from the excavation of raw material for its construction, during its proper construction, its operation, its maintenance, even in its demolition, that is during its whole life cycle and furthermore in all spatial scales, that is from the scale of its interior space up to the planet scale.

The SD-MED Association "**Association for co-operation on sustainable development and sustainable construction in the Mediterranean**" constitutes a **Hellenic-French and international** initiative, of non-profit character aiming at a multi-level and multi-dimensional cooperation around a common vision of sustainable development. It partly emanates and is consistent with the French Policy with regard to the need of cooperation for sustainable development in the Mediterranean, as expressed in 2002, in the Johannesburg Summit, with a view to encourage the **emergence of a common vision for the future of the Mediterranean**. Aim of this cooperation is the promotion of Euro-Mediterranean co-operation considered from the European Union as an economic co-operation, but also as a co-operation in the service of the environment for the confrontation of ecological inequalities in the region and the configuration of common conscience on the dilemmas arisen from sustainable development. A cooperation, on the other hand in the service of Human, articulated round the education, the health, the access in the cultural goods, the access in the residence.

Our Association SD-MED, as cooperation of personalities and technocrats but also mainly architects and engineers with specialisation and expertise on sustainable development and sustainable construction focuses on sustainable construction, considered as a action that can encourage the collaboration for the sustainable urban development and her application in projects that concern **the building, the built environment, the city, the land planning**, that is in projects and programmes of all territorial scales. It focuses consequently, and develops activities round the **necessary coupling of architectural quality with the environmental one**. It thus concerns very widely the construction sector where **Greece** has demonstrated exceptionally appreciable potential but also further possibilities of being a **centre of dissemination of know-how**, as for the wider region of Balkans, Central and Eastern Europe, and of course the Mediterranean.

Representing the SD-MED Association, I would like to thank sincerely the **Minister of Development M.Dimitris Sioufas**, the Mayor of Athens **Mrs D.Bakoyanni**, as well as the **Central Union of Municipalities and Communities of Greece** that comprehending and supporting our initiative, they place this Congress under their auspices. I would like to thank also the Japanese National

Committee of the World Congress SB05, the **EC Life-Environment Programme** as well as the **French Embassy in Greece**. Our thanks are also addressing to the International Organisations and Networks, iiSBE, CIB, the Environment Programme of the United Nations/DTIE, the International Union of Architects, the Union of Mediterranean Architects, the Spanish Green Building Challenge, the Egyptian ALEX-MED of the Bibliotheca Alexandrina, for being present today. We warmly thank, moreover, the **Technological Educational Institution of Athens**, the **UEHR of the University of Social and Political Sciences "Panteion" of Athens**, the Environmental Organisation "Clean-Up Greece" that they contribute with every way in the effort of consolidation of our initiative. We thank also, for his kind support, the Mayor of Palaion Faliron who is today with us as well as the **Conference Centre of the National Bank of Greece**. Finally, I would like to thank the **Municipality of Athens Development Agency**, beneficiary of the LIFE "SB-MED" Project, and particularly the CEO M.Alexandros Tsiatsiamis who chairs the second Plenary Session, for having jointly decided to co-organise this event so that to strengthen the synergy and the co-operation around the sustainable building, which constitutes besides a major objective of the LIFE -Env Programme. I request the Mayor of Palaion Faliron M.Dionyssis Hatzidakis, to address the opening greeting of the Conference.

Dr Stella KYVELOU

President of "SD-MED" International Association



Permettez-moi avant tout de féliciter l'équipe SD-MED qui a pris l'initiative de cette manifestation, et en premier lieu Stella Kyvelou, et de remercier toutes les personnalités et institutions qui ont permis sa réalisation. Merci au ministère du développement, à la mairie d'Athènes et à l'Union centrale des municipalités et communautés de Grèce. Les premiers propos qui viennent d'être prononcés par leurs représentants témoignent de l'intérêt porté à la cause du développement durable dans la construction, et il convient de souligner cet engagement particulièrement encourageant. Cette initiative permet par ailleurs au bassin Méditerranéen, zone de contact entre trois continents, entre le Nord et le Sud, d'être présent en tant que tel au congrès international SB05 à Tokyo en septembre prochain, et il faut s'en réjouir.

La vie d'un bâtiment est une histoire d'environnement: le terrain sur lequel il est édifié, les matériaux avec lesquels il est façonné, les vacarmes du chantier, les histoires d'eau de son arrivée à son évacuation, le paysage dans lequel il s'inscrit, et, plus tard, ses consommations d'énergie et ses rejets dans l'air et les poubelles, le bruit de ses occupants et celui de la route toute proche... Les points de rencontre entre l'écologie et la construction sont nombreux. Il faut y ajouter l'environnement des occupants, qui aspirent légitimement à des conditions sanitaires irréprochables, et à une bonne qualité de vie.

En termes d'activité économique, le bâtiment et, en amont, l'aménagement, représentent une part considérable de la production: au chiffre d'affaires du secteur de la construction, il faut ajouter les consommations d'eau et d'énergie, les services d'en-

retien et de nettoyage associés aux bâtiments, et bien sûr évacuer et traiter convenablement les rejets de toutes natures. Au total, c'est une part de l'ordre du cinquième du PIB qui est concernée. Améliorer le rendement environnemental dans ce secteur, c'est l'améliorer sur une part significative de l'économie des pays industrialisés.

Tel est l'enjeu, à la fois de gagner sur le plan de l'environnement, et de donner au secteur de la construction une nouvelle dynamique à l'aube du XXIème siècle. **Nous sommes bien dans une logique «gagnant-gagnant»**, avec un double dividende significatif du développement durable. La mise en pratique au quotidien des principes de développement durable s'apprend sur le terrain, et la construction nous offre un terrain d'apprentissage très fécond. Cette évolution ne s'improvise pas. Elle doit s'appuyer sur des méthodes, qui donnent aux acteurs des repères pour les aider à se poser les bonnes questions, au bon moment, et à faire les bons choix. Il ne faut pas non plus enfermer les créateurs dans des systèmes rigides, qui figeraient les techniques, alors que le but est de leur permettre d'avancer. Les méthodes à proposer doivent être ouvertes, adaptables en fonction des cultures, du contexte et des progrès technologiques.

Chaque pays, en fonction de son histoire, de l'organisation des professions, de ses règlements, développe des méthodes pour avancer sur la route du développement durable. Mais aucune nation ne peut à elle seule trouver toutes les réponses, et cela au plus vite, car la planète ne peut attendre trop longtemps. **Il est nécessaire que des échanges et des constructions communes de réponses performantes, se fassent à des niveaux géographiques régionaux**, où les contextes culturels, et où les climats, les paysages, les configurations physiques sont proches.

«SD-MED» réalise cet objectif pour le bassin méditerranéen. Nous créons ainsi et développons ensemble des systèmes ouverts d'apprentissage du développement durable, qui s'enrichissent mutuellement de l'expérience de chacun.

Dominique BIDOU

President of the HQE Association (France)
Honorary President of the «SD-MED» International Association

Our LIFE SB-MED partners said:



Professor. P. Gelimis

Director of UEHR, Panteion
University

Honorary Member
of the SD-MED
Association

On behalf of the **UEHR of Panteion University**, I have the pleasure to greet this International Conference. I perceive this conference not only as a typical one, where we will discuss and exchange views and experiences on the matters of sustainable building, **but mostly as an attempt to establish a network**. A network which will be created especially for the Mediterranean region, and which will try to respond to modern challenges by forming **relationships of synergy and collaboration** within a series of organisations that have to do both with universities and research institutes, as well as with personalities that have worked in this field and have dealt in action with relative matters as well as with the local government and the local community, which sometimes has a positive reaction to these attempts of sensitization that comes from initiatives of central or local organizations. I am aware of these experiences, particularly for the special, very sensitive, and historically and geographically rich Mediterranean region. Not from top to bottom, but as a procedure that voluntarily promotes standards as EMAS for companies, ISO etc. Because we must understand that society itself must show interest and the citizens themselves must become sensitive about the matter. Standards, tools, directions or measures and regulations are not enough. The synergy and participation of the user, the education, the training and the constant information of all the organisations, especially those of the private sector and of the civil society, are all necessary in order to be really able to achieve with their cooperation the aims that you have set in this conference.

I wouldn't like to tire you with any more details. I believe that we have many workshops in which we can participate and listen to the conclusions of the Conference. Finally, our Research University Institute participates actively as a partner providing expertise to the 'LIFE' SB-MED Project, which has to implement a Mediterranean "sustainable building" methodology to school buildings. For this purpose, creative links and joint action are being established between UEHR and the SD-MED Association.

I would like to wish to everybody a nice stay in Athens and Greece in general, which is making huge efforts to improve the environment and incorporate the environmental dimension in all sectoral policies, as stated already by the Minister of Development, because this is the most important bet for us.



Carla Baer-Manolopoulou

President of "Clean-Up
Greece"

Honorary Member
Of the SD-MED Association

As president of Clean up Greece I' am pleased and honored to support the SD-Med 04 conference. Clean up Greece is a non governmental, non profit organization based in Athens and partner of UNEP/MAP since 1999.

Clean up Greece is as well partner of the LIFE Environment SB-MED Project for Sustainable Building in the Mediterranean Region and responsible for awareness programmes regarding civil society and pupils.

We believe that ecological protection and sustainable development is a common responsibility and should be one of our priorities. To achieve this common goal we need to cooperate with governments, universities, companies as well as social society. To achieve sustainable development in living areas we should not restrain on construction sectors only, but take into consideration their inhabitants and the natural surroundings. We have to seek for an overall solution regarding sustainable neighborhood, offering solutions for all environmental requests.

Clean up Greece will present the results of the Youth Conference 2005 "Sustainable Schools" in a workshop at this conference. This surely is one step towards a future sustainable society.

I would like to thank Dr. Stella Kyvelou, scientific co-ordinator of the LIFE SB-MED Project and responsible of the SD-MED Network, for giving us all the opportunity to express our thoughts at this Euro-Mediterranean conference.

Our national partners and supporters said

On behalf of the **Central Union of Municipalities and Communities of Greece (KEDKE)**, I greet the Conference organized by the **International Union "SD-MED"** under the auspices of the Ministry of Development, the Municipality of Athens and KEDKE. The significance of sustainable construction for the Mediterranean and especially for Greece is obvious by the active support of the Conference by multiple important bodies, academic and research institutes, local governments, NGOs as well as European and international organizations.

This Conference is a pioneer event for our country, since the participation of these special presenters from Greece and abroad guarantees the discussion of subjects which interest both KEDKE and the Greek local governments. Some examples are; policies, indicators and standards for the environmental quality of buildings, best practices as well as failures in sustainable construction in the Mediterranean region, the participation of the users in sustainable planning and design, models of sustainable urban management and urban rehabilitation, modern environmental tools of energy efficiency and implementation of the renewable energy sources in buildings.

KEDKE is really sensitive towards these matters, while some of the municipalities, the innovative ones, have thought of environmental management and have already taken steps of action. A plain example has already been mentioned by the Mayor of Palaion Faliron. The conclusion is that we have reconstructed and innovated some buildings, we have implemented renewable energy and energy saving solutions. A good example is the group of about 100 municipalities which have the central heating of their schools working on natural gas. Nevertheless, the road ahead is long. It is our commitment to study thoroughly the Conference conclusions, as well as the studies for the sustainable building in the Mediterranean, of the on-going relevant project LIFE "SB-MED".



Christos Palaolologos

**Secretary General
of KEDKE**

Dear colleagues,

As President of TEI of Athens, the biggest Technological Educational Institution of the country, I am especially happy and honored to greet the current International Conference for Sustainable Building, which will contribute a lot to the expansion and implementation of our common aims, given the high status of the lecturers.

The TEI of Athens and all the TEI in the country have incorporated the subject of Sustainability in all of their relevant courses. This refers mainly to the courses related to Energy Technology and Techniques, which are pioneers in the field, as well as to the rest of the courses, which are related to construction and space-planning. This includes courses like the one of Construction Works and Substructure Works and of Decoration and Interior Design. The latter has incorporated the significant subject of "sustainability" and of High Environmental Quality of buildings, as far as it regards Interior and Industrial Design.

In recent years, the need to characterise every human activity as "sustainable" or not, is done in order to protect the environment and the natural resources, the wide ecosystem, which includes us all, to create a global consciousness and to set global strategic goals. It is also obvious that in order to turn "sustainability" in a global strategic goal, a change in human attitude is necessary. **This change has to do with the way human beings perceive themselves in the course of history, with the way they perceive the meaning of life and their role in society.** We wish that in your Conference this important subject will also be discussed.

I wish success to the Conference and I assure you that the TEI will take your conclusions under consideration to the highest extent possible.



Professor Georgios Kalkanis

**President
Technological Educational
Institution (TEI) of Athens**



Dionyssis Chatzidakis

**Mayor of Palaion
Faliron**

Mr President of TEI of Athens, Mr Secretary General of KEDKE, Mrs Chairman (Mrs Kyvelou), ladies and gentlemen. Both I and the Municipal Authorities of Palaion Faliron were glad to receive and respond to your proposition for supporting your International meeting.

And that's because we believe that the sustainable planning of groups of buildings, especially in the countries of the Mediterranean is the only way for its development and well-being. Up to now, our experience with the imminent function of the first nursery school in Greece, in the Municipality of Palaion Faliron, has taught us that actions like your conference should be reinforced and supported on a systematic basis.

It is high time everyone understood that the development and well being of a city and generally of a country cannot be achieved without the necessary respect to the environment, which can only be protected through new technologies and modern materials.

So, in my turn, I welcome you to Greece believing that the preoccupation and dialogue that will emerge from this conference, will render people sensitive about the sustainable construction in our country.

I wish success to your conference and I hope you have a nice stay in "renovated" Athens, the city that successfully held the Olympic Games and made all Greeks proud.

I sincerely thank you.

Our International partners said:



Niclas Svenningsen

**Representative of
UNEP/Division of
Technology, Industry and
Economics**

The United Nations Environment Programme (UNEP) is pleased and honored to be a partner in the SD-MED 04 conference. The building and construction industry is a key sector for sustainable development. At the same time as the sector provides many of the basic needs of society, such as housing, infrastructure for communication, production, waste management etc, it can also generate significant negative impact on the environment, such as pollution, waste generation, destruction of natural resources etc. The importance of the B&C sector is also increasing rapidly both as a consequence of the global urbanisation, and as an effect from a changing environment. The way we design, build, use, reuse, and finally decommission buildings is therefore becoming more critical for our ability to achieve sustainable development - not only environmentally, but socially and economic as well.

UNEP believes there is a significant potential in the building and construction sector to minimize the negative effects, while maximizing the benefits the sector can bring about. There are already today numerous examples of how buildings can be improved, how they can reduce their burden on the environment, while offering improved living space for their inhabitants. However, this potential requires a concerted effort to realize on a larger scale. It requires a systematic consideration of how we design, build and manage buildings, that goes far beyond short-sighted economic aspects. It requires innovation and support from many stakeholders directly or indirectly involved in the B&C process, and it requires above all cooperation and coordination between producers, architects, tenants and other stakeholders.

It is from this perspective that UNEP is proud to be partner to the SD-MED04 conference, because it is this kind of events that is essential for identifying opportunities and possibilities for turning development in the B&C sector into the right way - towards a sustainable future.

First of all, I would like to thank the organizing Association SD-MED for inviting me to this important meeting and express my appreciation for preparing and organizing this meeting in such an attractive environment.

The OECD has been working on the issue of sustainable buildings since 1998, when the OECD sustainable building project was launched. The first stage of our project focused on three environmental issues closely related to the design of buildings: energy efficiency, indoor air quality and waste minimisation. The next stage of the project, which started in 2003, focuses on two aspects: sustainable use of building stock and socially sustainable housing. As the result of this work, we find that the issue of sustainable buildings is increasingly recognized as an important issue in many OECD countries. However, we also realize that while many countries are developing various policy instruments in this area, there seems to be much room for improvement in terms of streamlining the development process of related policies by promoting international co-operation and co-ordination.

Experience in countries advanced in this area would be informative, and exchanging information among countries facing similar problems (such as the necessity to promote energy efficiency improvement in tropical climates) would be helpful in designing policies tailored to local needs.

Against this background, I believe that this regional conference will also be a valuable opportunity for the Mediterranean region to learn from experience in other regions as well as to develop policies and technologies tailored specifically for the region.

Thank you very much



Hirohisa AWANO

Division of Regional
Policies for Sustainable
Development, Directorate
for Public Governance and
Territorial Development,
OECD

Ladies and Gentlemen,

iiSBE is very pleased to welcome delegates at SB-Med into the series of conferences on sustainable building that has been initiated by CIB, iiSBE (the International Initiative for a Sustainable Built Environment) and DTIE/UNEP (the Division of Technology, Industry and Economics of the UNEP). However, most thanks should be extended to the **SD-Med organization, which has taken direct responsibility for the planning and operation of this event which was combined with a LIFE-ENV Euro-Mediterranean Event.** How the series of SB regional conferences came about may be of interest.

In 1994, the first international green building conference was organized by CIB (The International Council for Research and Innovation in Building and Construction) in the UK. This was followed by an even larger event in Paris in 1997. A somewhat different formulation was later developed for conferences related to the international Green Building Challenge process. The first event in this series was the GBC'98 conference in Vancouver. Following this, CIB and iiSBE decided to collaborate on an on-going series of SB conferences, beginning with the SB2000 event in Maastricht and SB02 in Oslo. This on-going series of international conferences is now seen as the premier international event in the field of sustainable building, as evidenced by an attendance of 600 (with 150 turned away) at GBC '98 in Vancouver, some 800 at SB2000 in Maastricht, and over 1000 at SB02 in Oslo. CIB and iiSBE decided to hold the next event in 2005, and Tokyo was been selected as the venue. UNEP has now joined iiSBE and CIB in planning the series of SB events. Specific events have included: July, 2004 Sao Paulo, Brazil, September, 2004 Shanghai, China, September, 2004 Stellenbosch, South Africa October, 2004 Warsaw, Poland, December, 2004 Cairo, Egypt May, 2005 Kuala Lumpur, Malaysia and June, 2005 Athens, Greece (Mediterranean, in synergy with a LIFE-Env Euro-Mediterranean Conference)

With this conference, the series of regional events is now complete, and the next step will be to present and to discuss findings at the regional session in the global Tokyo SB05 conference. We cannot expect a dramatic or complete solution to environmental issues in the various regions, but the focus provided by the papers presented at these conferences should be a very good start.



Nils Larsson

Executive Director iiSBE

Our International partners said:



Vassilis Grigoriadis

Representant of UMAR

Mr. Mayor, Mrs. Chairman, Ladies and Gentlemen, dear Colleagues,
The Mediterranean Union of Architects, n brief UMAR, is based on the common consideration that, through the millennia, the countries of the Mediterranean basin have shaped and created cultures that have been of paramount importance for the cultural development of the world.

We declare that, as architects, we are inevitably led to the collaboration for the creation of a built public and private environment, the protection of urban texture, of historical centres, of traditional architecture, of the environment and of the natural and cultural heritage. We still declare that architecture is a matter of public interest, and furthermore that essential aim of the architect's profession is the development and improvement of the quality of life, that independence and integrity constitute the most important factors of architecture.

For the achievement of these aims, collaboration is required not only between members of our union but also among all institutions with common competencies, so as to have significant results as soon as possible.

We believe in sustainable construction as a factor of growth for the Mediterranean countries, which collaborate and are committed to the protection of natural environment and the rational use of natural resources.

We are eager to participate in the co-operation for sustainable development.



Lisa Siola

**Chairman of the UIA/Greek
Department**

In my turn, I wish every success in this conference. As Chairman of the Greek Department of International Union of Architects but also as a member of the Council of International Union of Architects I have to say that that we are deeply interested in the subjects of sustainability. Nowadays, apart from the important subjects of the profession and the education of architects, that are in the foresight of today's discussions in the international union of architects with has as objective architecture and renewable energy sources. We are the pioneers in this programme and I see it participates actively in the organisation of this Congress and I believe that we contribute as much as we can. What I would wish as an architect is to help formulate the interest that presents the investigation of sustainable development and sustainable building in a region as the Mediterranean, which in the past has met a proportional development of its regions. Today the economic development as well as other kinds of development including technological one differ considerably from country to country in the Mediterranean At the same time, the use of traditional technologies and systems will give a very interesting combination and of course as I heard from the previous presenters we cannot expect general rules. However, we will watch with deep interest the beginning of this effort on the enormous subject for a sustainable future.

I thank you a lot.



Luis 'Alvarez-Ude

Representant of GBC Spain

On behalf of the GBC Spanish Team, which is participating in the Spanish High Council of Architects, I would like to welcome all the delegates attending this International Conference. I particularly wish to thank the organisers of this event, that, as far as I know, have made a huge effort - and, from what I have seen so far, a highly successful one - in order to make this Conference happen, because I am sure that they have had to overcome a great many difficulties. Finally, since many countries from the Mediterranean region are represented here, I trust that the results we obtain will help all the countries in the region to draw conclusions that will enable us to strive towards a more sustainable world, taking into account the specific economic, social and environmental conditions in which we live and which serve as our starting point. The Mediterranean region is a very fragile one from many different points of view, and I consider it to be our obligation to protect it.

Welcome once again, many thanks and now let's get down to work.

Scientific Agenda: Topics¹ at a glance

Plenary session I 9/6/2005	Specific conditions (economic, social, environmental, cultural) defining urban sustainability, Sustainable building (SB) and Sustainable Construction (SC) in the Mediterranean region. Chairmen: Stella Kyvelou, Dominique Bidou	8 presentations
Plenary session II 10/6/2005	Policies and strategies, perspectives and barriers for implementation of SB in the Mediterranean countries. Chairmen: Alexandros Tsiatsiamis, Nils Larsson	9 presentations
Plenary session III 11/6/2005	(Closing, Synthesis of round tables) Conclusions for the elaboration of the SBC Report for the Mediterranean region, to be presented in SB05 Tokyo.	5 Reports
Round Table I 11/6/2005	Methodologies, policies and standards for sustainable building and sustainable city in the Mediterranean	1 synthesis Report
Round Table II 11/6/2005	Building and city projects, systems and operations, where are we in the Mediterranean?	1 synthesis Report
Round Table III 11/6/2005	Assessment and evaluation instruments and tools: where are we?	1 synthesis Report
Round Table IV 11/6/2005	Financial instruments and mechanisms: market development, realities and perspectives.	1 synthesis Report
Parallel Workshop I 9/6/2005	Definitions, approaches, methodologies, indicators and standards of Sustainable Building (SB) and environmental quality (EQ) in buildings. Ia. Which definitions, which approaches? Ib. Indicators, Methodologies and standards, Standardisation of durability and sustainability in buildings, national and international progresses (ISO,CEN)	11 presentations
Parallel Workshop II 9/6/2005	Traditional and modern constructions: Best practices and failures in realized SB projects in the Mediterranean region. Ila. Traditional construction, as a source of knowledge for modern sustainable construction Ilb. Modern sustainable construction projects: Best practices and failures Ilc. Sustainable Olympics: experiences, plans and perspectives in hosting cities	23 presentations



¹ Topics and issues have been prepared by the "**SD-MED**" Association being responsible for the organizational and scientific coordination of the Conference and the conformity with the LIFE SB-MED Project Euro -Mediterranean Event.

Scientific Agenda: Topics¹ at a glance

Parallel Workshop III 9 / 6 / 2005	Environmental Quality and the Community, user and social groups' participation in sustainable planning and design. IIIa. General aspects IIIb. Best practices of implementing sustainability in school buildings, Lycees HQE in France. The LIFE Environment SB-MED Project and the school buildings.	16 presentations
Parallel Workshop IV 9 / 6 / 2005	Sustainable Urban rehabilitation and regeneration; Sustainable urban management. VIIIa. Which models of urban development in the Mediterranean basin? VIIIb. Projects and tools of urban rehabilitation and regeneration - Urban environmental management issues	16 presentations
Parallel Workshop V 10 / 6 / 2005	Policies and strategies, perspectives and barriers for implementation of SB in the Mediterranean countries. Va. National, regional and local policies and strategies for the implementation of SB in the Mediterranean region. Vb. Education, training, sensitization and communication issues	13 presentations
Parallel Workshop VI 10 / 6 / 2005	Performance assessment of buildings, Institutional and technical aspects of building performance. Performance assessment tools.	11 presentations
Parallel Workshop VII 10 / 6 / 2005	Sustainable Use of building stock (SUBS), General and Regional aspects, Sustainable housing-maintenance issues, Evaluation instruments and tools.	13 presentations
Parallel Workshop VIII 10 / 6 / 2005	Financial instruments to achieve energy efficiency, environmental quality and RES in buildings, innovative financial mechanisms (e.g. energy performance contracting, third party financing), Relevant market development . IVa. What instruments and methods of financing energy efficiency, environmental quality and RES in buildings? What innovative mechanisms in Europe and in the Mediterranean countries? Examples of energy performance contracting and third part financing schemes. Development of the ESCOs market in the region. IVb. Integration of renewable energy sources in buildings, Development of solar systems market.	21 presentations

¹ Topics and issues have been prepared by the "SD-MED" Association being responsible for the organizational and scientific coordination of the Conference and the conformity with the LIFE SB-MED Project Euro-Mediterranean Event.

Four Round Tables²: main outcomes

Round Table I (Aristotle)	Methodologies, policies and standards for sustainable building and sustainable city in the Mediterranean.
 	Participants: Jean Hetzel(FR), Andrea Moro(IT), Justo Garcia-Navarro(ES), Kostas Lytras(GR)
	Moderator: Ronald Rovers(iiSBE)
	Rapporteur: Dominique Bidou(FR)
	Languages: Greek, French, English

Main outcomes of the Round table I:

Enjeux méditerranéens. Spécificités Culturelles, techniques, environnementales (énergie, eau)

Zone privilégiée d'échanges Nord-Sud, avec besoins de transferts, d'où l'importance de créer des lieux, des instruments, des occasions de transferts de technologies.

Une question sensible: la subsidiarité, le contexte local et les réglementations nationales, régionales (méd, europe) et internationales.

Un point de débat: réglementation ou marché. Faux débat, car les deux sont complémentaires. IL faut voir leurs rôles respectifs.

Problèmes à résoudre:

- les professions, les compétences, les relations entre professionnels.
- Accompagnement du changement. Besoin de concepts et d'instruments simples et aisés à comprendre, adaptés aux cultures locales.
- Le coût des opérations. La nécessaire progressivité des investissements, on ne peut pas passer du jour au lendemain à des coûts trop importants, même si le coût global est favorable. Nécessité de trouver des instruments financiers et fiscaux.

Mediterranean characteristics:

Cultural, technical and environmental specificities (energy, water).Privileged zone of exchange between North and South, with necessity of transfers. Need to establish places, instruments and opportunities of technology transfer.

A sensible issue: need of subsidiarity, local context and various levels' regulations (national, regional-Mediterranean, European-and international).

A focal point for discussion: regulations or market oriented measures. They have been considered complementary. Their respective role has to be examined.

Problems and constraints to solve:

- New jobs, responsibilities, professional skills, relationships between different jobs.
- Follow-Up of change. Need of concepts and of simple tools, easily applicable and adapted to the local cultures.
- Cost of projects. Necessary progress of investments, cost increase won't be acceptable even if the global cost favors that. Necessity of using innovative financial instruments and tax measures.

² Held on Saturday, June 11th, 2005

Round Table II (Aristotle)	Building and city projects, systems and operations, where are we in the Mediterranean?
	Participants: Stephane Pouffary(FR), Matti Kones(IL), Nicos Fintikakis(GR), Michel Sabard (FR)
 	Moderator: René Pestre(FR), Nils Larsson(iiSBE)
 	Main Rapporteurs: Nikitas Chiotinis (GR), discussant: Pascal Gontier (FR) Languages: Greek, French, English

Main outcomes of the Round table II:

A. Problems and constraints

1. A general remark: main constraint for implementation, the inertia of the "old world"

2. Environment in the Mediterranean is being affected dramatically by the following factors :

- Perspective of increase of energy consumption in buildings (example of South and Eastern Mediterranean; buildings are responsible for 40% of the final energy consumption)

- Perspective of increase of construction activity in the Mediterranean

- Improvement of living standards and developing of air-conditioning culture in combination with special micro-climate conditions (e.g the heat island effect).

3. Scientific and technological knowledge on SB: is it available?

- Even if academic knowledge on SB is available, new jobs required and professional skills have not yet been developed.

- Lack of awareness and education for architects

- In Architectural schools sustainable design is not considered as a priority design principle.

4. Industry as well as professionals are not aware of the environmental impact of construction materials mainly as far as life cycle and lifetime characteristics are concerned. Even if research is quite advanced in these issues, such approaches have not been included in up to date regulations. Instruments and tools to support national policies and regulation procedure are not sufficient. Assessment and evaluation software tools of environmental impact of construction materials are not well known and friendly for the users (architects, engineers etc)

5. The cost and the affordability of sustainable constructions.

- Neither the public, nor, in the majority of cases, architects, engineers and developers are informed and aware of the "global cost" concept. Instruments to evaluate the global cost are not sufficient.

- Final Cost is also influenced by the fact that SB is not a common practice and consequently there is no sufficient demand.

6. The integration of the global cost concept will be revealed in major principle due to the restructuring of the construction market size of developments and projects, way of project financing, public-private partnerships etc)

B. Proposals-Recommendations

■ The establishment of a regional mechanism that will gather data and knowledge and will propose instruments and tools for design and evaluation to all actors involved in the construction and will provide information to state and local authorities to facilitate regulatory, volunteer, economic, investment and other policy measures.

● Integration of SB design as priority course in architectural

schools

■ Development of a mechanism of information and awareness raising to cope with the inertia of the "old world" and prepare the conditions for change.

■ Research coordination and dissemination of available techniques, focus on research for existing buildings and building stock.

● Multiply demonstration projects and support them financially.

Round Table III (Aristotle)

Assessment and Evaluation Instruments and tools, where are we?

Participants: Nils Larsson (iiSBE), Manuel Macias (ES), Dimitris Bikas (GR)

Contribution: Christian Faliu (FR), Georgios Papalabrou (GR), Nikitas Chiotinis (GR), Matti Kones (IL)

Moderator: Dimitris Bikas (GR)

Rapporteur : Justo Garcia-Navarro (ES)
Languages: Greek, French, English



Main outcomes:

Main outcomes of the Round table III (points):

A. Current situation: Many environmental methodologies and methods for evaluating the environmental performance of buildings are being currently developed in the world, according to the local cultures and organisation. Methods developed overseas include BREEAM (Building Research Establishment Environmental Assessment Method) in the UK, LEED (Leadership in Energy and Environment Design) in the USA, and GB Tool (Green building Tool) as an international project. Especially for the Mediterranean it is also worth mentioning VERDE, a software system for assess-

ing the environmental performance of buildings in Spain. VERDE is designed to allow assessments to be carried out at **various phases of the life cycle of a project**. Besides, a project methodology, called "HQE", that is high environmental quality has been developed in France presenting a mostly open character: it integrates a great number of parameters, requires a mode of management of the operations inspired by the international standard ISO 14001, and consists of a project methodology instead of a simple ex-post certification like in the majority of the other existing methods. Thus, it offers an interesting framework for capitalising experience feedbacks, and for seeking common denominators.

In the LIFE SB-MED Project, a study is carried out to elaborate an SB-MED Methodology based on the existing methods and approaches. Furthermore the SD-MED Association is preparing an SB-MED Assessment tool.

B. Discussion and proposals: The development and use of buildings' environmental performance assessment methodologies are considered to contribute greatly to the integration of methods and practices favouring sustainability in the building sector. It has been argued that the available assessment methods, that have been developed worldwide in order to evaluate the environmental performance of buildings, are built upon various principles and different evaluation items, data and criteria. and that the vast majority of these tools, more or less, ignore the lifetime parameters. The assessments they perform are based on initial conditions and characteristics and the alterations of the building elements' attributes are not taken into consideration. Some of the numerous buildings' environmental profile evaluation tools (corresponding to the various methodologies), recently developed, conduct detailed and thorough assessments and are thought to provide reliable results. The effective use of such tools presupposes the existence of the **appropriate substructure at national**

or regional level (extensive databases, regulations, statistics). The lack of an efficient substructure of this kind is one of the reasons that, while in many countries the use of assessment tools is widely discussed and tested, in the Mediterranean these efforts seem to be at an early stage.

C. Conclusions - Recommendations:

- All the speakers insisted on the fact that the assessment tools (either rating or labelling) should be simple and friendly to the user. Nevertheless, it has been argued that reference values (benchmarking) and systems would be preferable.
- It was also pinpointed that green city(urban planning, neighbour scale etc) tools have to be developed. There are some experiences in Europe (HQE2R tool, DPL etc), consequently transfer of this knowledge in Mediterranean countries should be supported.
- Besides integration of economic and social aspects in the tools has been proposed, as well as involvement of actors like decision makers, private companies, industrial actors etc.
- It was claimed that case-studies are useful and related training and education programmes have to be developed.
- The need to "work together" was finally revealed.

Round Table IV

(Aristotle)



Financial instruments and mechanisms, market development: realities and perspectives.

Participants: Iordanis Paradeisiadis (GR), Nasos Felonis (GR), Andrea Moro (IT), Kostas Lytras (GR)

Contribution: Matti Kones (IL), Pascal Gontier (FR), Christina Marouli(GR), Stella Kyvelou (GR)

Moderator: Hirohisa Awano (OECD)

Rapporteur: Dominique Sellier (FR)
Languages: Greek, French, English

Main outcomes of the Round table IV (points):

Issues discussed:

■ There were contradictory opinions about the use of novel and innovative financial mechanisms in financing energy efficiency in buildings and application of RES in buildings. RES systems manufacturers claimed that classical financial incentives are preferable and that states have to continue to subsidize relevant activities. It has been claimed that third party financing schemes require guaranteed results and thus imply extra costs due to the necessary application of verification and monitoring systems. The risk to increase the difference in cost-already existing-between green and conventional energy has been revealed, which will be a factor of discouraging market development and implementation of green building.

● On the other hand, it was claimed that scarce public resources and funds mainly for rehabilitation of public buildings and other infrastructures lead to the need to implement public-private partnership schemes and third part financing. References to the experiences of Germany, Belgium and Spain were made. Greek experience on the integration of PPP in the greek legislative system and a tpf law by which technical and commercial risks is outsourced to the ESCOs and where application of RES, Co-generation technology and in general substitution of traditional energy supply is promoted, has been broadly analyzed. The issue of legal and legislative security was raised to create the adequate environment for the mobilization of private funds.

■ It has been pinpointed that provision of energy services has to be combined with the proper energy management in buildings.

■ About development of ESCOs in the Mediterranean, it was stated that the development of ESCOs companies is inhibited by some legislative and market constraints. The current status of ESCOs activities was illustrated, such as the number of companies, the key sectors targeted, the most important facing market constraints and the approximate value of projects conducted by company. Special emphasis has been given on the future of the ESCOs market as concerns the Mediterranean region. Perspectives and strategic solutions for fulfilling the needs and

aims of the above companies have been discussed.

■ Indirect financial instruments were mentioned like those in practice in Switzerland having to do with a bonus system for extra surface of insulation or the consideration of solar collectors as thermal devices and not solar space in Italy. Share of cost between the user and the community has been also mentioned, practiced in some cases.

Conclusions - Recommendations:

■ Financial tools have to be complementary with other instruments or tools like policy tools, training and qualification measures etc

● Subsidies, meaning that over cost is resulting from SB are not adequate, nor sufficient. We need to identify best practices of financial instruments to mobilize funds and involve proactive key-players (investors, contractors, ESCOs etc)

■ In the Mediterranean, we need experience of pilot projects like it is the case in Germany, UK etc.

■ Efforts and willingness of Mediterranean countries to clarify relevant legal framework have to be supported since key actors are quite ready in the market.

● Furthermore, Need of broad information of the public has been identified (a kind of information points including financial issues)

■ Raising public awareness and user's participation has been notified.

■ To attract investors and other key-players we have to be attractive and convince about the profits of SB, about what is good for the user and the community as well (in terms of value for money)

● Bonus intensification has been also proposed.

■ Development of ESCOs meaning not only energy but environmental service companies which implies the integration of building environmental efficiency assessment and measurements, that is an easy quantification of environmental quality.

■ The need to develop Life Cycle Cost Tools has been mentioned to facilitate not only energy but environmental performance contracting.

Plenary Session III

(Rooms: Aristotle-Plato)

**Closing Plenary Session,
Summaries from Round Tables
Conclusions to be incorporated into the
SBC Mediterranean Report which will be
presented in TokyoSB05**

Languages: Greek, French, English

Overall Rapporteurs:



Stella Kyvelou



Dominique Bidou

Main outcomes, Proposals to SB05Tokyo:

Introduction:

The populations living along the coasts of the Mediterranean Basin are united not only by **ancient historical and cultural** ties, but also by the fact that they belong to the **same ecosystem or ecoregion**. This **historical and ecological unity** should not however blind us to the **many differences**, which are all too often simplified in terms of the North-South divide alone. The future of the Mediterranean basin depends on its people's ability to conceive a **collective management**, manifest interdependencies linking them, whether **geographical** (the sea), **political, economic** (trade), **social** (migratory flows) or **cultural**. Sustainable development can restore the sense of a common future for this region and can provide the opportunity to ensure the convergence of strategies led by various agents.

Current situation and future trends:

Sustainable construction is the expression of SD in the construction and building sector. Current situation and future trends of SBC in the Mediterranean have to be analysed through the following topics:

1. Specific conditions of the built environment in the Mediterranean basin (economic, social, environmental, technology, climate, urban



form related etc)

2. Policies and strategies in Mediterranean countries regarding sustainable building and construction. Links with strategy for sustainable development in the Mediterranean.
3. Progress of Projects and Techniques of sustainable building and construction. Recommendations for further progress.
4. Progress of performance assessment tools. Existing tools and need of a regional SB-MED tool (SB-MED Methodology and tool)
5. Progress of market oriented measures and financial instruments. Exchange of experiences and adaptation of financial instruments to national and local contexts. Need to promote Public-Private partnerships and third part financing schemes.
6. Strategies at a **macro-regional level**. For an effective implementation of sustainable built environment principles.

A general way of action:

In order to proceed to the elaboration of more effective macro-regional implementation concerning sustainable built environment, we have to find a solution to the following contradiction:

- on the one hand create a **common language**, which will be necessary to **exchange experiences and knowledge**,
- on the other hand **promote specific ways to reach environmental performances according to the geographical, cultural and technical local contexts**.
- Furthermore, a general policy framework to achieve sustainability of the built environment at a macro-regional level (e.g Southern Europe or the Mediterranean basin) should first of all include the establishment of a **mechanism** to elaborate **methodological bases needed to explore environmental excellency and diversity in different local conditions**. These bases have to respond to **specific problems and needs to help local actors to create their own systems**.

A proposal for coordinated action:

A Sustainable Building Observation Network is proposed. This is an already expressed in various relevant congresses (e.g B4E in Maastricht etc) joint proposal of St.Kyvelou and D.Bidou. This observatory could be established **in the framework** of the on-going Mediterranean strategy for sustainable development. Nevertheless it has to keep **its independent, non - governmental and coordinating character**. In this way effective participation of all the actors, players and stakeholders will be ensured (international organisations, states, local authorities, construction sector, and mainly NGO's, civil society). This observation network could also constitute a framework (see OECD recommendations) in order to: – **regularly monitor the environmental performance** of the building sector in the region – **encourage greener public purchasing strategies** for construction procurement and – **undertake ex - post evaluation of policy instruments**.

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Filosofia glocal

Le azioni per favorire la sostenibilità delle costruzioni nel bacino del Mediterraneo devono avere una strategia complessiva. Con un approccio alle specificità locali.



di Valentina Carpi

Mediterraneo sostenibile

Obiettivo è fare il punto delle conferenze, scambiare prospettive, progettare il futuro.



di Valentina Carpi



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