



**Sustainable Construction in Public and Private Works
through IPP approach**

Minutes of the Second Advisory Board Meeting held in Nicosia
on the 7th of December 2006



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1. Organisation

The meeting, organised by the University of Cyprus, was held in amphitheatre HOD 01-109 at the new University campus.

2. Participants

SUSCON PARTNERS

Organisation	Participants
University of Cyprus (organiser)	Dr. Despo Fatta Mr. Marios Avraamides Ms. Margarita Vatyliotou
Cybarco (partner)	Mr. Takis Palekyhritis
Cyprus Scientific and Technical Chamber - ETEK (partner)	Mr. Linos Chrysostomou

ADVISORY BOARD MEMBERS

No	Organisation	Participants
1	Cyprus Association of Mechanical Engineers	Mr. Kiriakos Tsiftes
2	Cyprus Organisation for Standardization	Ms. Despoina Zakou
3	Cyprus Association of Architects	Mr. Christos Theodorou
4	University of Cyprus, Department of Civil and Environmental Engineering	Ms. Christina Christou
5	Public Works Department (Tenders and Contracts Section)	Mr. Stelios Kallis
6	Cyprus Scientific and Technical Chamber	Mr. Linos Chrysostomou
7	Cyprus Association of Limestone Aggregate Producers	Mr. Ioannis Kyriakides
8	Ministry of Agriculture, Natural Resources and Environment (Environment Service)	Ms. Ioanna Konstantinidou
9	Geological Survey Department	Mr. Christodoulos Hatjigeorgiou
10	Cyprus Civil Engineers and Architects	Mr. Christos Panagiotides

	Association	
11	Cybarco (private construction company)	Mr. Takis Palekythritis
12	Cyprus Chamber of Commerce and Industry	Mr. Petros Samanis
13	Water Development Department	Ms. Panayiota Hadjigeorgiou
14	Cyprus Association of Geologists and Mineralogists	Mr. Christodoulos Hadjigeorgiou

3. Meeting Agenda

- 16:00 – 16:20 Arrival and Registration
- 16:20 – 16:35 Welcome / Progress from the first meeting by Dr. Despo Fatta, Lecturer, Department of Civil and Environmental Engineering, University of Cyprus
- 16:35 – 16:50 Results of Task 2: Analysis of the construction sector in Cyprus and Greece by Mr. Marios Avraamides, Department of Civil and Environmental Engineering, University of Cyprus
- 16:50 - 17:00 Results of Task 6: Creation of an online database for sustainable construction by Ms. Margarita Vatyliotou, Department of Civil and Environmental Engineering, University of Cyprus
- 17:00 – 17:10 Results of Task 3: Life Cycle Analysis in two construction activities by Mr. Takis Palekythritis, Cybarco Ltd
- 17:10- 17:30 Break
- 17:30 - 17:40 Description of the objectives of Task 4: Development of eco-design criteria by Mr. Linos Chrysostomou, ETEK
- 17:40 - 18:30 Discussion coordinated by Mr. Linos Chrysostomou and Dr. Despo Fatta.

4. Arrival - Registration

All participants were registered and supporting material, including the agenda, the second issue of the project's newsletter and an informative leaflets were distributed to all participants.

5. Presentations

1. Dr. Fatta's (UCY) welcomed all participants. Her presentation included the general and specific objectives of the project and focused on the progress made on the implementation of each of the 7 tasks of the SUSCON project since the previous meeting of the Advisory Board.
2. Mr. Avraamides (UCY) presented the results of task 2, which was led by EPTA, on the analysis of the construction sector in Greece and Cyprus and some comparison was made between the results of the two countries.
3. Ms. Vatyliotou (UCY) made a brief presentation on the work done in the context of task 6 regarding the creation of an online database for sustainable construction. Future implementation steps for this task were also outlined.
4. Mr. Palekythritis (Cybarco) presented the results of Task 3, which was led by NTUA, regarding the Life Cycle Analysis in the two construction activities: a building in Athens, constructed by Edrasis-Psallidas and an urban road constructed in Cyprus by Cybarco. The methodology used was described and the results presented. It was highlighted that the main conclusions from the analysis show that in the building case study the greater environmental impacts result from the operation stage (energy consumption), whereas in the road case impacts from the construction stage are greater. In both case studies, global warming is the main environmental impact arising from the lifecycle of the projects.

5. Mr. Chrysostomou (E TEK) defined “eco-design for products and services” and subsequently commented on indicative parameters that can set the framework for eco-design in construction. Subsequently he invited the Advisory Board members to express their opinion on criteria, which could be used to define the “eco-design approach”.

6. Discussion

1. With reference to the presentation made by Mr. Palekythritis (Cybarco), Mr. Panagiotides (Cyprus Civil Engineers and Architects Association) commented that the life cycle analysis of a building should not start from the construction stage but from the design stage in which the architect and the consultant play an important role in adopting more environmentally friendly practices. Mr. Avraamides (UCY) replied that although the design stages affects the whole of the project’s life cycle, it does not have any direct environmental impacts that can be analysed in an LCA context. Mr. Chrysostomou added that in Task 3 the existing situation of construction projects were analysed in order to find the most significant impacts resulting from as-used practices. He added that the development of eco-design criteria would be the next step of this project, thus all these views are considered important. The adoption of environmentally friendly practices starts from the design stage, thus, the definition of the eco-design criteria is considered as a very important step.
2. Mr. Tsiftes (Cyprus Association of Mechanical Engineers) mentioned that the new Directive on the energy performance of buildings should also be considered in the Life Cycle Analysis conducted as these will apply very soon. Mr. Chrysostomou mentioned that the development of eco-design criteria should also incorporate all related legislative provisions, one of which is the Directive on the energy performance of buildings.
3. The discussion on the development of eco-design criteria started with Mr. Panagiotides (Cyprus Civil Engineers and Architects Association). Mr. Panagiotides stated that some construction techniques that were used in the past should be considered when designing new works. The orientation of a building and the reuse of materials are such examples. Secondly he mentioned that the

exposure of the building (e.g. high exposure to the sun, close proximity to the beach e.t.c) should be considered in the criteria developed.

4. Mr. Chrysostomou (E TEK) noted that often town planning conditions (materials, type of construction, land use etc.) greatly affect the design of a construction project. As an example he mentioned that different materials could be preferred according to the location, surroundings and the ambient temperature of a building. Additionally, it was stated that different materials should be preferred for different types of buildings (i.e. industrial, domestic etc).
5. Mr. Tsiftes (Cyprus Association of Mechanical Engineers) mentioned that in regards to the energy performance of buildings minimum requirements have been determined. These requirements (related to the wind conditions, location etc) shall be fulfilled when granting the building permission.
6. Ms. Hadjigeorgiou (Water Development Department) noticed that apart from the minimum energy requirements other requirements such as building materials should be established.
7. Mr. Samanis (Cyprus Chamber of Commerce and Industry) stated that eco-design criteria should be determined only to the extent no excessive additional cost is encountered. Mr. Avraamides (UCY) noticed that the cost is dictated by market forces; therefore, the more environmentally friendly solutions will eventually be able to attract a higher market value..
8. Mr. Kyriakides (Cyprus Association of Limestone Aggregate Producers) commented that there should be a variable fee when granting the building permission depending on the fulfilment of the various eco-design criteria.
9. Ms. Zakou (Cyprus Organisation for Standardisation) stated that a new trend is currently evident as regards the use recycling materials in construction activities in which existing standards are revised to include recycled materials. A reference was made to BRE (British Research Establishment) in the UK which established a set of eco-design criteria on a voluntary basis. Some good examples of

applications have been mentioned including buildings with minimal energy consumptions, the use of recycled materials in specific construction parts etc.

10. Mr. Chrysostomou (ETEK) enquired whether there is a complete legislative framework that includes a set of eco-design criteria. Ms. Zakou mentioned that apart from some voluntary initiatives (e.g. the BRE example) there are no specific statutes including exclusively such criteria. Mr. Tsiftes mentioned that there are statutory criteria on the energy performance of buildings. In addition, according to Ms. Vatyliotou (UCY) there are statutory provisions relevant to the solid and hazardous waste produced over the whole life cycle of a construction.
11. Mr. Chrysostomou informed the members of the advisory board on the organisation of a national annual competition for 'sustainable construction project'. Two competitions will take place in each country (Cyprus and Greece) during the course of this project, one in 2007 and one in 2008. In the first competition projects will be evaluated on the basis of a set of general criteria which will be defined in the next few months and on which the Advisory Board will be asked to express their opinion. In the final competition, projects will be evaluated on the basis of the final set of eco-design that will be developed in Task 4 and through the software evaluation tool which will be developed in Task 5 of the project. Mr. Chrysostomou recommended that such competitions should also be organised by the Environment Service. Ms. Konstantinidou (Environment Service) mentioned that there are already competitions regarding mainly Environmental Management Systems and Schemes, however, the organisation of a competition on sustainable construction could as well be considered.

7. Closing Remarks

Dr. Fatta concluded that eco-design criteria mainly revolve around two axes: energy and materials. The comprehensive consideration of these two categories will enable us to achieve positive steps in the improvement of sustainability of construction works. The members of the Advisory Board were invited to comment on the development of the eco-design criteria via email over the 10 days.

The main issues raised during the discussion stage of the meeting are summarised in the following table:

No	Issue	Raised by
1	Consideration of the design stage in the LCA of construction works.	Mr. Panagiotides/ Cyprus Civil Engineers and Architects Association
2	Consideration of statutory provisions on the Energy Performance of buildings in the LCA and eco-design criteria.	Mr. Tsiftes/ Cyprus Mechanical Engineers Association
3	Establishment of criteria on parameters apart from energy, such as building materials.	Ms. Hadjigeorgiou (Water Development Department)
4	Development of eco-design criteria with careful consideration of their cost implications.	Mr. Samanis/ Cyprus Chamber of Commerce and Industry