

# Sustainable Construction in Public and Private Works through IPP approach



## Newsletter – Issue N°2 (November 2006)

**SUSCON** is a LIFE – Environment project (LIFE 05 ENV/GR/000235) aiming at the adoption and application of “sustainable construction” concept in the practices of construction industries, engineering consulting companies which draft technical specification of civil works, public authorities which issue technical tenders, suppliers of construction materials and other stakeholders involved in this field.

### Project Partners:

- National Technical University of Athens (School of Chemical Engineering)
- EDRASIS C. PSALLIDAS S.A.
- EPTA Ltd. – Environmental Consultants Engineers
- University of Cyprus (Department of Civil and Environmental Engineering)
- CYBARCO Ltd.
- Technical Chamber of Cyprus



## Life Cycle Assessment in Building



The Life Cycle Assessment methodology (LCA) is a powerful tool used for the assessment of the environmental impacts of a product or service during its life cycle.

In the framework of the SUSCON project, the LCA methodology has been applied for a building in Athens, constructed by EDRASIS C. PSALLIDAS S.A., with the use of the “GaBi 4” software. The building consists of three underground garages and three ground stores and it is going to be used as office building and exhibition centre for ELEVOR A.E.B.E..

The first step of the assessment included the creation of the Life Cycle Inventory (LCI), which provides a quantitative catalogue of energy and raw material requirements, atmospheric and waterborne emissions and solid waste produced during the life cycle of the building.

The impact assessment step was accomplished with the use of the CML normalization factors, developed by the Institute of Environmental Sciences of the Leiden University.

The most important results that were drawn from the Life Cycle Assessment are summarized below:

-  The use phase environmental impacts accounted for more than 92% of the total inventoried environmental burdens.
-  Energy consumption during the use phase of the building (for heating, cooling and lighting) accounts for around 80% of the total environmental score, due to its contribution to the global warming potential.

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## Editorial

The construction sector is strategically important for Europe providing building and infrastructure on which all sectors of the economy depend. With 11.8 million operatives directly employed in the sector, it is Europe's largest industrial employer accounting for 7.5% of total employment and representing 10% of the European Union gross domestic product (GDP). However, the construction activity causes huge environmental impacts, since it consumes 16% of the world water resources, 30 - 40% of the energy and 50% of the extracted raw materials. As a result of the increased raw material and energy consumption, the construction sector produces around 40 - 50% of the generated waste and is responsible for 20 - 30% of the greenhouse gas emissions.



## First Meeting of the Advisory Board

The first meeting of the Advisory Board in Cyprus took place on April 13th, 2006. In the meeting representatives of 24 organizations were invited, among which the Cyprus Chamber of Commerce and Industry, the Union of Cyprus Municipalities, the Ministry of Education and Culture, the Ministry of Agriculture, Natural Resources and Environment, the Federation of the Building Contractors Associations of Cyprus, the Cyprus Energy Regulatory Authority and the Cyprus Association of Environmental Scientists and Engineers.

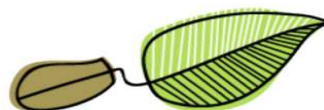
The first meeting of the Advisory Board in Greece was held one month later, on May 15<sup>th</sup>, 2006. In the meeting representatives of 22 organizations were invited, among which the Ministry for the Environment, Physical Planning & Public Works, the Ministry of Development, the Greek Standardization Organization, the Technical Chamber of Greece, the Hellenic Association of Consulting Firms, the Centre for Renewable Energy Sources and the Hellenic Association of Chemical Engineers.

This first meeting was mainly informative in both countries and focused on the project objectives, the construction activity in Greece and Cyprus and the importance of sustainability. The participants of both Boards appeared quite pleased by the efforts made by the SUSCON partners to promote sustainability in the construction sector.



# Progress of the Project

## – Future Actions



**R**egarding the progress of the project during the last six months, the following actions have been realized:

### Publicity

**R**egarding the publicity of the project, the official web page is regularly updated and informed with the progress and results of all the on-going actions.

(<http://www.uest.gr/suscon/>).

### Second project meeting

**I**n May 2006, the second meeting between the partners of the project took place in Cyprus, during which the up-to-then project progress was discussed and the next actions were planned.

### Life Cycle Assessment in Road Works

**I**n the framework of the SUSCON project, the second construction product studied under the Life Cycle Assessment methodology was a part of Cyprus road network, which is constructed by CYBARCO. The results of the LCA in the road will be presented in the next months.

### Database for Sustainable Construction

**T**he general specifications and functional requirements for the creation of an online database on sustainable construction have been determined. The database will provide information to construction and consulting companies, construction material suppliers, environmental organisations, the public sector and the public.

**T**he action plan of the project for the next six months includes many actions, among which are the following:

### Third project meeting

**I**n December 2006, the third meeting between the partners of the project will take place in Athens. Among others, the results of the LCA conducted will be discussed and the details regarding the first national competition for 'sustainable construction project' will be set.

### Second meeting of the Advisory Board

**I**n December 2006, the second meeting of the Advisory Board will take place in both countries, during which the project progress and results will be assessed.



### Organization of the first Competition

**D**uring the next six months all the necessary actions will be conducted, in order for the first competition for 'sustainable construction project in public and private sector' to be held in June 2007, in both countries. The most important actions required are the establishment of the Assessment Committee, the dissemination of the competition, the invitation of construction companies to submit their proposals and the assessment procedure.



# News regarding IPP

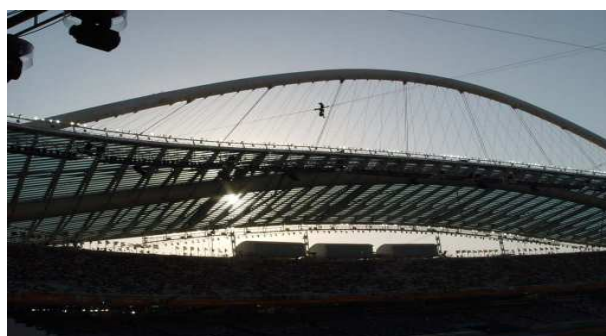
## Progress in Europe related to Integrated Product Policy:

The Commission announced in its Communication to the Council and the European Parliament on Integrated Product Policy in 2003, that it will seek to identify and stimulate action on products with the greatest potential for environmental improvement. This work, which started in 2004, is carried out by the Institute for Prospective Technological Studies and is divided in three phases.

During the first phase (EIPRO), which was completed in May 2006, a methodology was developed in order to identify the products with the greatest environmental impact from a life-cycle perspective consumed in the EU. The results of the study show that products from only three areas of consumption, food and drink, private transportation and housing, together are responsible for 70 – 80% of environmental impacts of private consumption. All other areas of consumption together account for no more than 20 – 30% of most environmental impacts. These findings are based on a review of existing studies plus supplementary work on the new methodology.

The second phase of the work (IMPRO), which will be completed in 2007, attempts to identify possible ways in which the life-cycle environmental impacts can be reduced for some of the products that are among those with the greatest environmental impacts. Particularly for the residential buildings, the study will include: estimation and comparison of the environmental impacts of buildings used as household dwellings and identification of the main environmental improvement options regarding their feasibility and potential social and economic impacts.

Following this, the European Commission will in the third phase seek to address policy measures for the products that are identified to have the greatest potential for environmental improvement at least socio-economic cost.



*For more information, you can visit the project website:*

[www.uest.gr/suscon/](http://www.uest.gr/suscon/)

