

# HUMANE

## SEMINAR

### Environmental Issues

**Madrid, 18-19 September 1998**

The following summary is not intended as a full account of statements or contributions, but for each presentation uses extracts from the abstract provided by the speaker, and gives (in *italics*) some idea of the discussion which was associated with the talk.

#### **Eco campus: Initiatives taken at the Universidad Autonoma de Madrid**

Dr. Luciano Galán (Gerente), and Dr Javier Benayas, Universidad Autonoma de Madrid

*Luciano Galan and his assistant Javier Benayas welcomed delegates to the campus of the Universidad Autónoma de Madrid (UAM) and explained the processes which underlay the University's Green Policy. The meeting rather symbolically took place in a room directly next to the "Green Office" which is responsible for all such matters, and it was noted that all texts distributed at the meeting were printed on recycled paper.*

UAM is a relatively young (1968) and average-sized university, with some 32,000 students. It covers 225 hectares, of which 302,000 square metres are covered by buildings, with further building on 260,000 square metres being planned. This enlargement will allow for the integration of environmental aspects which were not taken into account at the beginning. The University, being a public institution devoted to knowledge through teaching and research, must take on a leading role in spreading environmental awareness.

To that end, the UAM Senate has unanimously approved a Charter of Commitment to Agenda 21 and to the agreements reached at the "Earth Summit" (Rio de Janeiro, 1992) - the so-called Ecocampus Project. This document has two main goals:

- to establish points of reference that will allow improved environmental conditions at UAM

- to promote the involvement of the University community in the debate and to search for solutions regarding both local and global environmental conflicts.

In order to achieve such ambitious goals, the University should be constantly concerned with identifying and correcting any practices which routinely degrade and pollute the environment. The development of appropriate instruments and methodologies is necessary to allow for a continuing assessment.

*The presentation stressed the favourable position of the University, situated on the outskirts of Madrid, but also the very serious analyses which had formed the basis for all policy development. Sometimes these factors came together, as in the analyses of the number of cars arriving at or leaving the campus at each hour of the day - having only three entrances made this a practical proposition. Delegates were very impressed by the examples of analyses such as spreadsheets noting the number and geographical distribution of each species of plant on the campus. Discussion included comments on the difficulties posed everywhere by car parking, and the methods of encouraging use of public transport - UAM has a dedicated railway station.*

## **Conscious Management of University Campuses: lessons from the European Ecocampus Collaboration**

Professor Jacques Roturier, C.E.N.B.G. Université Bordeaux 1

*As is clear in the summary, this presentation also laid great emphasis on analysis of existing conditions.*

In terms of the major challenges of energy and the environment (e.g., the decrease of oil/natural gas resources, the nuclear waste/CO<sub>2</sub> debate, the growth of demand for water, ozone depletion) a general level of knowledge exists in universities and research laboratories all over the world. But most scientists in these institutions are very far from implementing in-house energy efficiency policies since these are not yet regarded as a genuine cheap resource. Not surprisingly, campus managers often pay little attention to such policies, with the same being true for environment-safe (e.g., water management) concerns.

For several years this important issue has received attention from scientists and consultants from several countries of the EU (Denmark, Finland, France, Greece and Portugal) and CECE (Poland and Romania), as part of the ECOCAMPUS collaboration funded by the EU. The project, established at the end of 1996 for 18 months, concentrates particularly on the use of electricity, water consumption and waste management. Relying on the key issues underlined in the EUE-95 Declaration Statement, its main goals are summarized as follows:

- i. to create a European network of University campuses and research laboratories where managers, academic staff and scientists include as a key priority the clean production issues in each step of building or facilities management;
- ii. to collect and analyse all available data concerning energy use and/or environmental protection in investment and O/M of all campus facilities;
- iii. to define a specific methodology for such sites;
- iv. to perform feasibility studies, analysing the benefits and the obstacles when the clean production issues, including Energy Efficiency Programs, are introduced in each step of the scientific process.

*M Roturier produced several very interesting charts and graphs which showed the variable consumption of electricity, water, etc during single days or over periods of years. He several times referred to the amount of electricity which was saved by having computers and lights switched off when not in use - the general principle would be that the default position was "off". Other examples included the recycling of water which would otherwise be wasted. Delegates were very interested by the substantial savings which he identified, and which seemed to pay back initial investment in a relatively short time..*

## **Environmental management system in European Universities: a pilot project at Valencia Polytechnic University**

Dr. Eduardo Peris Mora, Director Oficina Verde Universidad Politecnica de Valencia

*The Director of the Green Office of the Polytechnic University of Valencia explained the framework within which his university was trying to fulfil the aims of Agenda 21 from Rio, within an Environmental Management System (EMAS). His presentation was more technical and process-driven than the others, and questions related more to the official framework within which the activity was taking place.*

“Agenda 21” from the Rio de Janeiro UN Conference and the "Environment Action Program in the EU" established the new paradigm of "sustainability". All industrial projects, urban management and regional planning, should be managed within environmental criteria and maximum social participation. The Right to Environmental Information Directive, the Regulation of Eco-management and Audit Scheme, the Eco-labels, ISO 14.000, etc. are some of the new environmental rules in Europe.

The Quality Management Standards (ISO 9000 series) appeared as a consequence of the free market in the 80's, with the concept of quality being easily extended to eco-quality. Council Regulation 1836/93 regulates in Europe the voluntary procedure through which industrial enterprises can join the Environmental Management and Audit Scheme (EMAS). After that, the EU has proposed the extension of EMAS to other economic sectors and services. The Polytechnic University of Valencia, supported by the European Commission, has developed in 1997/98 a project called "Implementation on a pilot basis and development of a methodology to implant an Environmental Management System to be applied in European Universities".

In a few years' time the management of industrial enterprises will have been taken over by professionals who are currently being trained at Universities. The University researches and generates technology. The role that the University can exercise becomes more and more important. It is crucial to start now, because there is a time lapse between the action (education) and the consequences (changes in the behavior of industrial sector managers).

Direct application of standard models to implement an environmental management system in HEIs presents several obstacles. The nature of the enterprise (the site or center) and the distribution of responsibilities (staff, management participation and information) have to be considered in designing the best way to implement EMAS under the European regulation. The structure of the general management of an industrial enterprise and of a University could be considered as similar; however, environmental management cannot be understood without considering some important peculiarities: the nature of the enterprise and its capacity to contaminate in relation to industrial ones; the environmental effects (those of low magnitude may have some level of risk though not continuous in time).

The special nature of HEIs has been considered in the proposal to implement the EMAS in Polytechnic University of Valencia. Because of its autonomous organization, Spanish Public Universities have a complex structure. A guide to implementation has been produced as a result of this project and the culminating step in the process will be the certification of EMAS in the university by a competent body.

## **The University greening process: The case of the “Environmental Plan of the Universitat Politècnica de Catalunya**

Mr. Ivan Capdevila i Peña, Polytechnic University of Catalonia (UPC)

In December 1996, the UPC approved its Environment Plan for the period 1996-2001, the aim of which is to protect the environment by means of the following measures:

- As a body of individuals, UPC will seek to impress on its members the importance of environmental awareness - notably by endeavouring to include environmental issues in its curricula, so that students acquire the necessary knowledge to respect the environment in their future careers.
- As a research centre, UPC will include environmental issues in its research activities, intensifying environmental research in order to improve quality of life and transfer to society science, technology and approaches that treat the environment with respect.
- As an institution, UPC will ensure that all activities carried out within the University have the least possible environmental impact - it will do everything in its power to reduce the impact of the waste it produces, minimise the consumption of raw materials, recycle solid urban waste and treat toxic and hazardous waste correctly.
- In short, UPC will promote the development of an integral environmental model at the University. The ultimate objective is to project this model more generally into society as a contribution towards achieving sustainable development.

The UPC Environmental Plan is made up of 41 action projects within the framework of the 5 natural areas of the University: first and second cycle education, postgraduate work, research, university life and consciousness-raising. Since the establishment of the Plan, 18 months ago, 15 out of the 41 projects have already been carried out in the areas mentioned above:

- Education: introductory courses on the environment for teaching staff, introduction of environmental impact in final theses, establishing environment sections in the various libraries, publishing a book (“Environment Guide. A Technical Introduction to the Environment”), etc.;
- Research: drawing up a research map, internal seminars on research co-ordination, etc.;
- University life: collecting hazardous and toxic waste from the laboratories, drawing up Integral Plans for selective waste collection in the various centres, drawing up the document “Environmental Criteria in the Design, Construction and Use of Buildings” and application in the new buildings in Castelldefels and Manresa, etc.;
- Public awareness: running the Environmental Ideas Competition, an Environment Website (<http://cdecma.upc.es/mediambient/>), publishing the magazine “Informacions ambiental” (“Environment Information”) etc.

In addition, to co-ordinate and monitor the implementation of the Environment Plan, the UPC Environment Commission has been set up, with internal and external members. A Report on environment-linked activities for 1997 has also been drawn up and it is planned to produce such a Report annually (see note on discussion).

*Mr Capdevila provided delegates with copies both of the original (1996) Environmental Plan of the University, and also its 1997 report on progress. The latter was particularly striking for an honest appraisal of what had been achieved. There was much admiration for the methodical approach whereby teaching, research and all other aspects of university life were analysed in terms of a "greening ratio" which gave a score to the efforts of each Faculty or activity. Thus (for example) the School of Architecture had massively (43%) increased the environmental elements of its teaching, as opposed to certain other areas (eg, Ophthalmology) where such issues were clearly less applicable.*

## **European Environmental policies: the CRE- Copernicus programme**

Dr Hans-Peter Windelmann, University of Dortmund

*Dr Winkelmann is the Director of the CRE-COPERNICUS Programme (COoperation Programme in Europe for Research on Nature and Industry through Coordinated University Studies). In presenting the work of COPERNICUS he noted that with 216 universities committed to its principles the organisation was in a similar state of growth to HUMANE. His presentation was most concerned with explaining the nature of the organisation, and offering further information from the INFU office at the University of Dortmund. It was agreed that HUMANE should remain in contact with COPERNICUS for the exchange of views and information.*

The COPERNICUS programme represents an effort to mobilise the resources of universities and academia in favour of sustainable development in environmental protection. It enhances contact between HEIs in Europe, and also encourages the formation of relationships with industry and management. The main instrument for furthering this commitment on the part of universities is the **Charter for Sustainable Development**, drawn up in 1993 as a follow-up to the CRE's Urgent Appeal presented at the 1992 Earth Summit in Rio. The charter has been signed by 216 universities in Europe to date.

The target of the COPERNICUS programme is to stimulate the discussion on the further implementation of Agenda 21:

- **How can Agenda 21 be implemented within the university level ?**
- **What role can Universities play to help society in the further implementation of Agenda 21 ?**

Universities should contribute to sustainable development:

1. in the generation and dissemination of knowledge, which generally will be well in line with the university core competencies of research and teaching.
2. as local knowledge centers for sustainable development to help society to meet the challenge of sustainable development on the local level. COPERNICUS perceives universities on the local level as eminent partners of industry, government and other stakeholders in a common effort "Localise Agenda 21".
3. by developing sound environmental practices themselves - HEIs must therefore organise appropriate auditing schemes and develop sound environmental management behaviour.

In general, the COPERNICUS programme should function as a networking tool for cooperation between different European universities to stimulate a sharing of knowledge and expertise. The aims of COPERNICUS reflect both the desire to foster a more integrated and multidisciplinary approach to the understanding of environmental problems and the development of a more sustainable society. By following this mission, COPERNICUS will contribute to promoting cohesion among Universities in all parts of Europe.

*General discussion in this and other sessions notably included speculation as to why Spain was so prominent in this area of university life - possible answers included the economic success of the 1990's, and the 1992 European Games in Barcelona, which had encouraged new building and allowed innovation in the use of materials.*

Summary by Trevor Field.