Sino-Italian Cooperation Program
Environmental Training Community

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newsletter
工作通讯

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Italian Ministry
for the Environment and Territory

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Graphic design
peppe clemente, studio cheste venezia

printed in September 2006
in Venice, Italy
by Grafiche Veneziane srl

The Italian Ministry for the Environment and Territory (IMET) has recently been renamed as Ministry for the Environment, Land and Sea of Italy (IMELS).

In this Newsletter issue, both acronyms are being used.

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2006年9月, 意大利, 威尼斯市,
Grafiche Veneziane有限公司出版

意大利环境与领土部（IMET）将更名为意大利环境、国土和海洋部（IMELS）.
两个缩写名称在本期简讯中均有出现。

editorial

This third issue of the *Environmental Training Community* Newsletter, published within the framework of the Sino-Italian Cooperation Program, comes at a very special and significant time: Italian Prime Minister Romano Prodi's visit to the People's Republic of China. This official visit will no doubt enhance relations between Italy and China, thanks also to the thriving cultural and scientific cooperation between our two countries.

We believe that much has been achieved and is currently under way in the Sino-Italian Training Program on Environmental Management and Sustainable Development, thanks to the active role played by an international Institution based on the island of San Servolo in Venice, Venice International University (VIU). The VIU has, indeed, actively contributed to the success of this cooperation, and has opened new and exciting perspectives and challenges.

Before the Italian Prime Minister's visit, a key event in this field has taken place at the beginning of July: a Sino-Italian Green Week, organized in Beijing by the Italian Ministry for the Environment to celebrate six years of cooperation. During this Week, a number of outstanding events and interesting workshops on different aspects of sustainable development were held. These included the inauguration on the campus of the prestigious Tsinghua University of an Sino-Italian Ecological & Energy-Efficient Building (SIEEB), designed by Italian architects and built with the financial support of the Italian Government. The Green Week offered an extraordinary opportunity to explore new perspectives and challenges in the Sino-Italian Training Program on Environmental Management and Sustainable Development.

Three "landmark" events are described below.

1) The success of the Training Program was acknowledged by the organization of a special Workshop devoted to the important issue of *Training the Ruling Class for Sustainable Development* and by the first reunion of the Alumni, who had the opportunity to meet again in Beijing at an official dinner. This meeting allowed participants to become better acquainted and, above all, exchange experiences and views. They all had taken part in a similar Program which started off in Venice at the VIU, but continued in Rome, at IMET, and in Turin, at Agroinnova. This Program has involved more than one thousand Chinese participants in three years, coming from the Chinese Academy of Social Sciences (CASS), the Chinese Ministry of Science and Technology (MOST), the Chinese Ministry of the Environment (SEPA) and the Beijing and Shanghai Environment Protection Bureaus.

For the Italian Professors who had been involved in the organization and management of this challenging program, it was an extremely moving and pleasant experience to meet again in China a large number of these participants. This social event also confirmed the importance of creating and maintaining a network to keep the participants in the Training Program linked together and in continuous contact. This will make it possible to rely primarily on their help to implement the Sino-Italian cooperation projects, thus contributing to making China's extraordinary economic growth experience more sustainable. This is the reason why the Venice International University is creating a Web Portal which was presented at the Green Week and is becoming operational at this very time.

2) During the opening Ceremony of the Sino-Italian Ecological & Energy-Efficient Building (SIEEB) in the Tsinghua campus, the importance of the cooperation established between Chinese and Italian Universities was confirmed. Thanks to the VIU's very structure, it is possible to widen this cooperation to a group of world-class Universities, in such an important field as environmental and sustainability science. The Agreement signed for an exchange of PhD students and faculty between VIU and the Universities of Tsinghua in Beijing and of Tongji in Shanghai – an Agreement promoted and actively supported by the Italian Ministry for the Environment - is a first concrete step in this direction; these are facts, not just abstract wishes, on which further cooperative efforts can be developed.
Cooperation with Tsinghua University opened with a joint Workshop at their campus in October 2005. This first Workshop provided the occasion for the Italian and Chinese Institutions to "compare notes" on research projects on sustainable development and environmental science currently being carried out in both Tsinghua and Ca' Foscari Universities. Up to now, thirteen Tsinghua PhD students from the Department of Environmental Sciences and Engineering have benefited from this exchange program; they visited VIU and Ca' Foscari University of Venice for three months, attending courses and continuing their research under the supervision of local faculty. The participation of PhD Tsinghua students in the VIU programs will continue and, starting from 2007, PhD students from Tongji University of Shanghai will join the group.
With Tongji University a cooperation project has just started in the field of art and design related to cultural and environmental preservation: three PhD students from Tongji will visit Venice in the next months while three VIU students will similarly be the guests of the University.
The cooperation among Universities is widening from educational and training projects to the field of research: an EU-funded Asialink project on Climate Change and Sustainable Development is being implemented between, among others, Ca' Foscari University, Tsinghua University, and Renmin University of China. The experience made available by research projects of this kind is highly valued; the VIU and Tongji University are therefore planning to apply for a new Asialink.
3) Thanks to the excellent results of the Training Program and of cooperation between the Chinese and Italian faculties in advanced PhD educational and research programs, the President of the VIU, Ambassador Umberto Vattani, launched an exciting challenge during the Green Week: to promote a "Club of Venice" at the VIU, 35 years after the Club of Rome issued the seminal report on "*Limits to Growth*". That report focused on the scarcity of exhaustible resources and raw materials and was later extended to analyzing the ecological limits to growth. Today, however, as global giants such as China emerge and lay claim to unprecedented economic development, the emphasis shifts from "limits" to "quality" of growth.
This idea, to which China can give a decisive contribution, was enthusiastically received by our Chinese friends and we have no doubt will help shape future cooperation strategies.
Mankind is facing new global environmental challenges: the shortage of energy; air pollution and climate change that bring increasing vulnerability to natural disasters; chemical pollution and hazardous waste; depletion and pollution of water resources; deforestation, land degradation and the loss of biodiversity. These are the challenges to a new science of sustainability to be used by economic and social agents, together with political decision makers, to build a more harmonious society, as current leaders have labeled it, whose main objective is enhancing the quality of growth. Chinese and Italian Universities and Institutions have learned during these years to work together on the new environmental challenges to growth. They must now make it their duty to build on their accomplishments by contributing to the study and solution of these issues and establishing an international point of reference. That is why VIU is committed to making our Chinese and Italian institutions a focus point for the implementation of Ambassador Vattani's proposal. After the "*Club of Rome*", a "Club of Venice" at the VIU will gather scholars, entrepreneurs and decision-makers who will jointly work on advocating, in a documented and credible manner, a world strategy for sustainable development.

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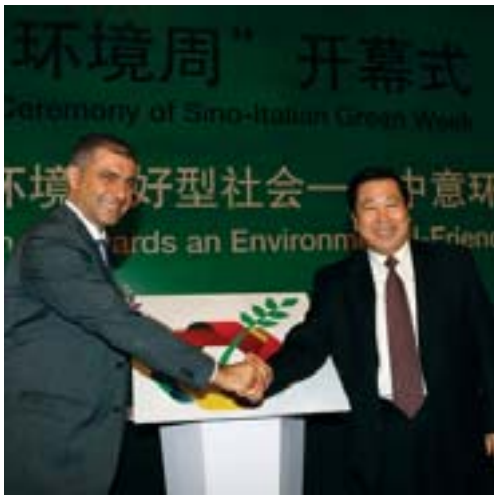
Beyond the Green Week

Corrado Clini, General Director, Department for Environmental Research and Development, IMELS

This issue of the newsletter gives a large coverage of the Sino-Italian Green Week on environmental cooperation, which took place with great success in Beijing from July 3rd to July 6th.
It is time now to go beyond the expected results of the event (disseminate the outcome results of 6 years of cooperation with the major Chinese institutions and start planning the next steps) in order to pick up the challenge given by the results of this great event.
Of course, the newsletter can only give some hints about the topics at stake. This is why we should gather again to analyse thoroughly the next actions to start out on and to share our experiences with others (I was thinking of a workshop at VIU's premises, in which the different Italian institutions interested in our project can exchange ideas by using some of our projects as case studies and the policy analysis tools to investigate the political, administrative, technological financial and management requirements of some Chinese success stories).
First of all, we must concentrate on increasing the program's efficiency, and optimising and improving the communication. Then, we must understand whether to take into consideration new issues. As far as efficiency is concerned, we are now leaving the stage in which we allowed our Chinese partners for a better understanding of all the potentials offered by the cooperation with IMET and all the other partners through general explanations of our working framework, topics, technologies and methods. The next phase will focus on a detailed and thorough investigation of the specific themes and technologies of great significance for both Italy and China. At the same time, all the activities which gave excellent results during all these years will continue through direct relations between the Chinese Institutions and the Italian enterprises, and with the creation of Italian-Chinese joint ventures. Moreover, PMOs will carry on their role of facilitators in order to avoid wasting the extended network of relations built over these years.
Furthermore, the diffusion of pilot projects in China through demonstration activities is of utmost importance to prove the possibility to extend the results in the whole country. Finally, specific communication projects must be set up to explain to the public and to the Italian and Chinese institutions the great potential of our activities and the innovative approach of the environmental cooperation. Other important projects must also be developed such as the opportunity of developing Sino-Italian cooperation projects in the field of environment for the poorest countries. In fact, at the official meetings the Italian Minister for Environment Mr. Pecoraro Scanio has often expressed the intention of the Italian Government of carrying out such projects. Chinese authorities did not refuse such proposal, therefore, we will develop specific projects in order to realise this common resolution.
The Training activities developed in cooperation with VIU in the framework of the Programme will also be the subject of an important discussion to identify further developments. Numerous students have attended VIU's training courses which have been representative of the whole Green Week. However, we must not stand still: we must vary and improve the courses. One last consideration: the Green Week has anticipated the forthcoming visit of the Italian Prime Minister in China. I believe that all the people who worked hard for the Green Week's success should know that they have surely contributed to the success of President Prodi's mission.

“Sino-Italian Green Week”
Beijing, 3 – 7 July 2006

The “Sino-Italian Green Week”, held in Beijing from 3 to 6 July, was organized as part of the celebrations for the Year of Italy in China. It was focused on the Sino-Italian Cooperation for the Environmental Protection and Sustainable Development. The week was devoted to the presentation of the projects coming under the Program set up by the Ministry for the Environment Land and Sea of Italy in cooperation with several Chinese Institutions.
It was inaugurated by Antonio Pecoraro Scanio, Minister, Ministry for the Environment Land and Sea of Italy, and Zhou Shengxian, Minister, State Environmental Protection Administration of China, in the prestigious Great Hall of the People in Tiananmen Square.
The ceremony comprised three sessions: the first session of the Sino-Italian Green Week was officially opened by Zhou Shengxian and Alfonso Pecoraro Scanio, unveiled the official logo of the Week in the midst of an emotionally charged atmosphere.
The second session which was devoted to the speeches by the political representatives of the Chinese and Italian Institutions was chaired by Chen Jiaqui, Member of the Standing Committee of the People’s National Congress, and Vice Chairman of the Chinese Academy of Social Sciences (CASS). He addressed the audience with an opening speech in which he described the developments that have occurred in recent years in the programme of the Environmental Cooperation Program.
Zhou Shengxian, Minister of the State Environmental Protection Administration of China (SEPA), pointed out that thanks to the Sino-Italian Cooperation Programme, launched in 2000, 57 project initiatives have being implemented in 14 Chinese Provinces, producing concrete results and improving living conditions in these regions.
Leng Rong, Member of the Standing Committee of the People’s National Congress, Vice Chairman of the Chinese Academy of Social Sciences, spoke of the international cooperation that has been under way, since 2000, between the Chinese Academy of Social Sciences and the Ministry for the Environment Land and Sea of Italy. He pointed out that environmental protection is a theme which has played an increasingly important role in the Chinese Government’s actions indeed it has set a series of extremely far-sighted goals in order to appreciably improve Chinese environment.
Alfonso Pecoraro Scanio, Minister of the Ministry for the Environment Land and Sea of Italy, pointed out that the Chinese White Paper is an excellent starting point for China to succeed in improving the quality of its environment in the near future; he also described how the past six years of environmental cooperation represent a concrete example of how the cooperation between two countries can be fruitful. Shang Yong, Vice Minister of the Ministry of Science and Technology of China (MOST) spoke of the sustainable development as a foremost worldwide problem. The Chinese Government is focusing on this problem with a view to reconciling economic growth and environmental protection.
Ji Lin, Deputy Mayor of Beijing Municipality, expressed the importance of environmental



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issues for a city like Beijing, especially in view of the Olympic Games to be held in 2008 and he stated his personal appreciation for the tangible benefits that the Sino-Italian cooperation has produced for the environment of the Beijing Municipality. Umberto Vattani, President, Italian Trade Commission, pointed out how the Chinese and Italian Governments have been working together for six years and recalled the achievements reached so far. Gabriele Menegatti, Ambassador of Italy in China, spoke of the Sino-Italian Cooperation as a major model of cooperation between the two countries for the results achieved.
The third session was characterized by the interventions of the technical and political representatives of the Chinese, Italian and international institutions and of the representatives of Italian companies.
Corrado Clini, Director General of the Ministry for the Environment Land and Sea of Italy, thanked the Chinese friends of SEPA, CASS, MOST, Beijing and Shanghai Municipalities, Chinese Universities, and emphasized the importance of the international cooperation program that started with China. Klaus Toeofer, ex Executive Director of UNEP, delivered a speech in which he explained that development and a stable economy can be brought about only with the availability of financial capital, private capital, social capital and natural capital. On the basis of these remarks, the Chinese economy needs to activate new investments especially in the energy and clean technologies field.
Jin Bei, Vice Director General of the Institute for Economic and Industrial Research, CASS, stated that China needs to strike the difficult balance between economic and industrial development on the one hand, and environmental protection on the other. Nowadays the role of energy is of critical importance, and it is precisely in this sector that a number of major projects are being carried out with the Ministry for the Environment Land and Sea of Italy. Teresa Serra, Director of Environmental and Social Development in the Asian Region of the World Bank, spoke first of all of the longstanding successful cooperation between the World Bank and Italy and she also recalled the experiences with major Chinese organizations like SEPA and NDRC in various Chinese Provinces within the framework of the environmental cooperation programme with the Italian Ministry for the Environment Land and Sea of Italy. Gong Yuyang, Director of China Operations, Louis Benger Group, INC, like Jin Bei and Teresa Serra, focused his speech on the critical role played by energy and by its correct use worldwide, in particular in China. Francesco Merloni, Merloni Termo Sanitari, pointed out that MTS seeks to meet the sustainable development needs of the Chinese Government by providing vanguard techniques.
Paolo Monferino, Manager Director of IVECO S.p.A., expressed his thanks to the Ministry for the Environment Land and Sea of Italy for having enabled IVECO to enter into international cooperation agreements, and in particular agreements with Beijing Municipality. Moreover, he also stressed the fact that the Sino-Italian environmental programme is an excellent example of how cooperation policies should be developed between different countries. Francesco Zofrea, Chairman of ENI Power, explained how honoured he was to participate to the Sino-Italian International Cooperation projects, because few other cooperation projects have accomplished achievements of such a high level. Franz Senfter, President of Grandi Salumifici Italiani, dwelled not only of the importance of environmental protection but he also focused on the importance of protecting food products and hence consumers.

During the Sino-Italian Green Week, seven thematic seminars were held which dealt with the major environmental issues and with the results of the work accomplished as a result of the Sino-Italian cooperation efforts.

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"Sino-Italian cooperation in view of the Beijing Olympic Games" – Beijing Hotel – 4July

Ji Lin, Vice Mayor of the Beijing Municipality and Paolo Costa, Chairman of the Transport Committee of the European Parliament, gave the opening speeches in which they expressed their appreciation and satisfaction for the tangible benefits that the Sino-Italian cooperation is providing to the Beijing Municipality. The London experience was presented as case study, and for comparison purposes, illustrating the various modalities adopted by the larger towns in the world as they seek to face and solve the huge problem of traffic congestion.

Shi Hanmin, Director General of the Beijing Environmental Protection Bureau and Yu Xiaoxuan, Director General of the Department for Environmental Affairs of the Beijing Organizing Committee for the Olympic Games (BOCOG), gave a general presentation not only of the engagements undertaken by the Municipality and by the Olympic Games Committee, but also of the many projects that are under way in various key sectors such as the upgrading of public transport, sustainable mobility, monitoring of the air and building of the Olympic facilities.

This forum was followed by a number of contributions by the representatives of some Italian companies and by Chinese experts who are actively involved in a long number of projects. Francesco Merloni of Merloni Termo Sanitari (MTS) illustrated the programme that will introduce solar energy technology for water heating and air conditioning in the Olympic village; Paolo Monferino, General Director of IVECO S.p.A., focused on the importance of a sustainable transport system in the urban area by using public vehicles endowed with high efficiency natural gas powered engines and characterized by very low emissions; Zhang Guogang, General Manager of Beijing Public Transportation Corp. (BPTC), presented the results obtained after the implementation of an "Intelligent Transport System" for urban traffic regulation; Gioacchino Gabbuti, representative of the ATAC local transport company, focused on the importance of developing an efficient and sustainable public transport system; Zhu Tong of Beijing University presented the preliminary results of the studies aimed at developing methods to control vehicle

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emissions in Beijing; Ivo Allegrini, Director of the Air Pollution Institute (IIA) of CNR, stressed the importance of setting up a monitoring system and a laboratory aimed at controlling air quality in sports facilities and in the areas that will host the athletes.

Sustainable Agriculture: a global challenge – Beijing Hotel – 4July

This Forum was an opportunity for presenting the results of cooperation projects in the agro-environmental area coordinated by the *Centre of Competence* AGROINNOVA of the University of Turin with the aim of promoting research, training and technological transfer for sustainable farming in China.
The Rector of the University of Turin, Ezio Pelizzetti, pointed out that the project activities were an opportunity enabling AGROINNOVA to enter into a long-term partnership with research centres, universities, companies, and with Chinese and Italian Public Administration bodies. Li Yuan, Director General of the State Environmental Protection Administration of China, described the results of the projects and the strong impact they have had; and he expressed the hope to strengthen the partnership. Mei Xurong, Director General of the Chinese Academy for Agrarian Sciences, Dong Renjie, person in charge of international relations of the Chinese Agriculture University, and Heinz W. Dehne, Director of the Institute for Plant Diseases of the University of Bonn, pointed out that international cooperation in the area of teaching and research can create new professional profiles that are qualified on global themes, and are capable of supporting, in the long term, the conversion to farming practices that are respectful of the environment. Raimondo Serra, Cousellor Agricultural Problems, Delegation of the European Commission in Beijing, recalled that synergies and coordination are necessary in order to promote the harmonization of production processes and to upgrade the quality and health standards so as to avoid imbalances in the trading of farm produce between Europe and China.
The extreme importance of weaving an extensive network of international partnerships in order to successfully promote sustainable farming in China was a theme which emerged from all the presentations of the speakers who took part in the Forum. Prof. Maria Lodovica Gullino, Director of AGROINNOVA, pointed out the fact that, thanks to the availability of national and international funds, thirty-five Italian and Chinese young researchers are actively involved in doing research, testing and training work under the various cooperation projects; moreover, the fact that the projects are co-financed by the Chinese and Italian governments and partners are guarantees of efficiency and efficacy.

"Sustainable management of water resources in China" – Beijing Hotel – 4 July

The Ministry for the Environment Land and Sea of Italy, Mr. Gao Bo, Director General of the Chinese Ministry for Water Resources, and Mr. Huang Ping, Director General of the Chinese Academy of Social Sciences and the Office for the "South-North Water Diversion Project" Committee of the Council of State renewed their interest in the water management activities of the Sino-Italian Cooperation Programme, stressing the importance of the Sino-Italian SWIM ("Sustainable Water Integrated Management") cooperation project as a precious decision-making instrument for sustainable water management.
On the occasion of the Forum, Li Xinjun, Director General, State Council Commission on the "South-North Water Diversion Project" illustrated the great Chinese South-North diversion project and the contribution made by Italy to the study of sustainability in the management and optimization of resources, through the Sino-Italian SWIM ("Sustainable Water Integrated Management") cooperation project. The preliminary results of the study on the demand of water resources by Chinese industries were presented by Chen Jining,

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Vice Rector of Tsinghua University, who confirmed that socio-economic development heavily depends on the accomplishment of the great water diversion project.
Mr. Pretner of IDRA and Mr Liu Ke of UNESCO emphasized the fact that the SWIM project allows for sustainable economic growth in the medium and long term also thanks to its built-in educational component, developed in cooperation with UNESCO; and to the activities, developed together with UNEP-GEF, aimed at rehabilitating the ecosystems present in that area.
On the occasion of the Forum Ms. Beatrice Bertolo, Po River Basin Management, spoke of the Italian situation in the area of integrated water management describing the management processes with special reference to the competencies of the Basin Board. She described the ways in which droughts are managed, stressing the importance of the involvement and coordination of the stakeholders.
Corrado Clini, Director General of the Ministry for the Environment Land and Sea, concluded the reports by pointing out that an integrated approach to the management of resources is of fundamental importance in view of sustainable development in the medium and long term, and that the "SWIM" cooperation project is a valid example of support that can be provided to the sustainable management of water resources that can be replicated also in other developing countries in Asia, Africa and South America.
It was proposed to include the instrument developed by the Sino-Italian working group under the SWIM project in China's "Five Year National Plan" .

"Sustainable development in the education of the ruling class" – Beijing Hotel – 4 July

The Forum was an opportunity for providing an update of the project for the training of Chinese senior managers and high level technical staff on the issues of sustainable development and protection of the environment which envisages the participation of more than 1800 participants in three years.
Prof. Ignazio Musu, from Venice International University and co-director of the Training Programme, opened the Forum with an extensive description of the organizational structure and contents of the training courses, on the reasons for their success and on the future prospects for development linked to the consolidation of the training experience of the participants. While Prof. Pier Francesco Ghetti, Rector of the Ca' Foscari University of

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Venice, focused on the need to promote an exchange of paradigms in the management of environmental resources, he also emphasized how essential it is for universities to play a fundamental role in this process.
The Secretary General of the Chinese National Commission for Education in Environmental Sciences, Mr. Hu Hongyun, explained how during the last 30 years the need for training in the area of environmental protection has grown, and has now become a priority need for the Chinese society. Prof. Paolo Costa, former Rector of Ca' Foscari, former Dean of Venice International University, and current chairman of the Committee on Transport and Tourism of the European Parliament, further emphasized how the impact of training courses on environmental sustainability is particularly beneficial in emerging economies like the Chinese economy.
The second part of the Forum was devoted to the speeches of the representatives of the five Chinese institutions with which the Ministry for the Environment Land and Sea of Italy has initiated the training programmes: besides the Chinese Academy of Social Sciences, already mentioned above, speeches were also presented by the representatives of the Ministry of Science and Technology of China, the State Environmental Protection Administration of China, the Bureau for Environmental Protection of the Beijing Municipality, and the Municipality of Shanghai. Each of the five speakers mentioned the strategic importance of training courses, describing how training programmes have been designed to provide the technical competencies required to implement the cooperation projects.
The Forum was concluded by the contribution of Umberto Vattani, Chairman of Venice International University and Chairman of ICE, who confirmed the great value of training activities offered by Venice International University.

Towards the "harmonious and sustainable development" of the marginal areas in Western China
Projects along the Silk Road (Inner Mongolia, Gansu, Quinghai, Xinjihang, Ningxia, Shaanxi) and Tibet – Beijing Hotel – 5 July

The aim of this seminar was to give to the international audience an overview of the problems that affect Western China, giving special emphasis to the current situation and to future prospects. The opening address was given by Xia Guang, Director General of the Policy Research Centre of the Chinese Ministry for Environmental Protection, who analysed the policies adopted for the protection of the environment linked to economic development. Riccardo Valentini, an expert of the Ministry of the Environment Land and Sea and former chairman of the Committee on Science and Technology of UNCCD (Secretariat of the United Nations Convention to Combat Desertification), gave an overview of desertification and the problems related, pointing out that the Chinese arid zones constitute a predominant part of the world's arid areas, therefore highlighting the international importance of the efforts China is undertaking to reduce the extent of such zones.
A general description of the policies implemented by the Government during the last few years for the development of the remote areas of Western China was presented by the speech of Mr. Du Ping, Director General of the Western China Development Drive Office of the Council of State, which was followed by the speech of Prof. Zhao Xiusheng of Tsinghua University, Expert of the Tibet region, which described the situation of Tibet from the energy standpoint and the major threats to its fragile ecosystem; he also offered some guidelines for compatible energy exploitation. Luo Yamin, Director of the Environmental Protection Bureau of Xi'an, pointed out the effectiveness of a long list of actions that the local government has implemented in the last few years to ensure economic development.
Contributions were then presented by Magda Lovei, Sector Manager for the Environment

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and Social Development of East Asia and Pacific Region of the World Bank, who presented the Strategic Environmental Assessment experience carried out by the Bank in Western China, and Mr. Zang Chunlin, Vice Director General of the CCICCD Office to Combat Desertification of the State Forestry Administration, who described the current situation in the fight against desertification in the Western areas of China.
The practical experience of the Italian Ministry for the Environment Land and Sea was described by Venanzio Vallerani, Expert of the Ministry for the Environment Land and Sea, who presented the main characteristics of the method that he developed and that bears his name (the Vallerani Method) highlighting the successful results obtained in China and in other countries in the world, and by Francesco Zofrea, Chairman of EniPower, who illustrated the electrification project of a village and of several dwellings in the remotest areas of Inner Mongolia.
The forum was concluded by Corrado Clini, Director General of the Ministry for the Environment Land and Sea who highlighted the important results achieved by the Sino-Italian cooperation suggesting that they could jointly be transferred to other developing Countries, and by Mr. Zhuang Guotai, Director General of the Foreign Economic Cooperation Office of the State Environmental Protection Administration of China, who emphasized how Italy and China intend to increase their financial efforts for the protection of the environment in the marginal areas of Western China.

"Energy security and protection of the global climate" – Beijing Hotel – 5 July

Matching the need to ensure energy security and at the same time minimizing climate changes, is a global problem that has unique characteristics in terms of importance and impact in a country like China. The Forum focused on this issue and was an opportunity for sharing ideas and discussing a theme that has priority on the agenda of all worldwide governments.
The Forum was opened by the Director General of the Committee on Climate Change of the China National Development and Reform Commission, Gao Guangsheng who reviewed the agreements signed by China and highlighted the efforts they are making in following the path of sustainable growth. The Director General of the Italian Ministry for the Environment Land and Sea, Corrado Clini, illustrated some significant simulations of different development paths and emphasized the fact that if the current emerging economies were to adopt the most advanced technologies, emissions could be reduced.
The Seminar continued with interventions by the Special Advisor on Climate Changes of the Ministry of Foreign Affairs of the United Kingdom, John Ashton, who emphasized that the private and financial communities must make efforts as well because these tasks cannot be left only in the hands of the national governments and he highlighted that among the new emission abatement technologies, those for the storage of CO_2 are absolutely crucial.
Professor Vittorio Canuto of Columbia University and advisor to NASA, reviewed the main steps that have led to the current situation of the Earth and he pointed out how dangerous it is to go on under evaluating or even worse, ignoring the alarm bells that the Earth is ringing, while Mr. Lu Xuedu, Director of the Ministry of Science and Technology of China, presented an interesting update on the state of negotiations for the commitments envisaged under the second Kyoto Protocol.
Shi Dan, Director General of the Energy Department of the Industrial and Economic Institute of the Chinese Academy of Social Sciences and Li Baoshan, Director General of the Ministry of Science and Technology both described in detail the efforts that the Chinese government is making to encourage energy saving and the use of renewable energy sources.
After the initial presentations which reviewed the issues in general, the projects that the Sino-Italian cooperation programme are promoting were presented.

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Marco Cremonini, the expert in charge of International Projects for CETMA, presented the results of the cooperation projects in the area of energy efficiency that were developed with the support of the Italian Ministry for the Environment Land and Sea with the aim of identifying measures and technologies to be adopted in the industrial plants in order to improve their energy efficiency.
Roberto Garosi, person in charge of the Business area of Ansaldo Energia, illustrated the technology that they are developing with the financial contribution of the European Commission, which is based on the storage of the CO_2 produced by the generation of energy from fossil fuels.
And finally, Gilberto Gabrielli, Managing Director of Euregio Finance, described a project for the generation of energy from natural gas obtained from animal dung, an example of a renewable energy source having an extremely high potential.
At the end of the Forum, the moderator of the discussion, Li Liyan of the Committee for Climate Change of the National Development and Reform Commission, emphasized the importance of the international cooperation that has been set up between the Italian Ministry for the Environment Land and Sea and the Chinese Government and also expressed the hope that the joint efforts will be further enhanced.

Sustainable development in the large urban areas: the cases of Shanghai and Tianjin – Tshingua University – 6 July

Urban development in China during the last twenty years, probably represents the greatest expansion of built-up areas in the world's history. Between 2003 and 2020 fourteen billion square metres of residential areas will be built in China; in order to better cope with China's huge environmental problems, a better control of urban growth and better sustainable development policies are an indispensable priority for the Chinese government and for international cooperation in China.
The Forum was devoted to the presentation of models and solutions for sustainable urban development. Within the framework of the impressive growth process in Chinese towns a contribution by Italian design for urban areas was presented. In this connection a review was presented of the cases of Shanghai, which is preparing to meet the new challenge of the Expo 2010 and of its demanding slogan "Better City Better Life", and of Tianjin, which is seeking to combine a record breaking growth-rate with the recovery of historic neighbourhoods, among which is also the Italian neighbourhood.
The debate focused on eco-compatible architecture and engineering was chaired by Prof. Federico Butera of the Polytechnic of Milan. Contributions were provided by the Vice Rector of Tshingua University, Mr. Chen Jining, the Vice Governor of the Hebei District in the Municipality of Tianjin, Mr. Wang Sizheng, Director of the General Planning Department for the 2010 World Exhibition Prof. Zhu Dajian from Tongji University of Shanghai, Mrs. Wu Yuping, from the research centre for Environmental Policies of the Chinese Ministry for the Environment, Architect Mario Occhiuto, who is working on an Italian project for the planning of a new neighbourhood in Beijing, Ing. Sandro Favero, who supervised the construction of the Sino-Italian Energy Efficient Building (SIEEB) in Tsinghua University and which was the result of high level technological cooperation between China and Italy, Mr. Antonio Parazzulo, Managing Director of Thetis SpA., who presented examples of concrete cases of sustainable mobility in urban centres that can be easily duplicated, and Mr. Massimo Ferlini, Chairman of the National Observatory on Waste and Hon. Paolo Costa, Chairman of the Transport Committee of the European Parliament, who concluded the Forum by illustrating the European policies on sustainable development in large urban areas.

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editorial

beyond the green week

Parliament to air companies: "Curb CO2 emissions"

As competition increases amongst airlines and cheap air tickets are more and more common, Members of the European Parliament (MEPs) took a look at the environmental effects of the aviation industry. As a result Parliament adopted a resolution in which it proposes a combination of measures which on one hand may affect prices of flights while reducing emissions of greenhouse gases into the atmosphere.
Plane emissions are at present just 3% of the EU total but growing rapidly. If no measures are taken by 2012 increased emissions from aviation will counteract more that a quarter of the reductions required by the EU's Kyoto target.
The proposed resolution intends to apply the rules of the emission trading system in the aviation sector so that airlines which will exceed the limits of emissions will be able to buy emission credits from those who stay below their designated limits. Parliament also calls for improvement of the air traffic management which can save fuel and reduce emissions.
As plane emissions are covered neither by Kyoto Protocol nor by any other international climate change rules, the initiative supported by Parliament will put EU to the forefront of fight against climate change.

Batteries to be collected and recycled, nature protected

After two years of negotiation, Members of the European Parliament (MEPs) approved a directive which will ensure that schemes for collecting spent portable batteries and accumulators are set up throughout Europe by 2008; according to that collected batteries will be recycled and strict limits to the content of cadmium and mercury in batteries have also been fixed.
This new directive will help consumers to consume more intelligently and producers to reduce pollution, such as mercury, cadmium and lead.
Collection schemes and the requirement for distributors to take back waste batteries are the key points of this directive. Another important point is the registration of producers using similar procedures in all Member States.
In 2002 the collection rates of portable batteries in the six countries which have already set up schemes were: Belgium 59%, Sweden 55%, Austria 44%, Germany 39%, the Netherlands 32% and France 16%.
The new directive lays down minimum collection rates to be reached by all Member States: 25% by 2012 and 45% by 2016.

Better coordination will reduce the risk of floods

Since almost 80 per cent of European rivers flow across borders and coastlines are shared, Members of the European Parliament (MEPs) are calling on EU countries to coordinate flood risk assessment and management. The focus should be on risk rather than floods and urges Member States to draw up flood risk maps. While emphasizing the environmental impact of floods, the law leaves it up to Member States to develop

specific measures for special areas.
This Directive will help to attain the environmental objectives laid down in the Community legislation in force; in addition to assessing and managing of flood risks aiming at the reduction of the adverse consequences on human health, the environment and economic activity and the release of dangerous chemicals.
The aim of the Directive is not only the reduction of flood risks, but also the management of such risks. Therefore Member States shall, at the level of the river basin district, prepare flood maps and indicative flood damage maps, hereinafter "flood risk maps", for the river basins, sub-basins and stretches of coastline identified.
Concerning areas beyond national borders, MEPs say that in the case of shared river basins, sub-basins or stretches of coastline, Member States shall cooperate in the implementation of the Directive.
The Directive aims to ensure that in the case of shared river basins, Member States are required to coordinate when determining the levels of protection. This is a particularly important safeguard for downstream countries. Furthermore, in the case of an international river basin district extending beyond the boundaries of the Community, where one single international flood risk management plan including any third country concerned is not produced,

the Member State or Member States concerned shall endeavor to establish appropriate coordination with the relevant third countries, with the aim of achieving the objectives of this Directive throughout the river basin district.

Biodiversity loss is not inevitable

Biodiversity is all forms of life on Earth - species, genes and ecosystems - and is vital to man. It affects the climate, air, water, soil fertility, food production, medicines, in fact every aspect of our lives.
To preserve and restore biodiversity, EU Heads of State and Government agreed at the Göteborg Summit in 2001, "to halt the loss of biodiversity in the EU by 2010" and to restore habitats and natural systems. But it is important to see the protection of biodiversity not just as a goal to be met by 2010. The Parliament has already begun to improve its ecological behavior. In 2006 it is implementing an Environmental Management System based on the European Union Eco-Management and Audit Scheme (EMAS) standard; an example that others are encouraged to follow.
But this represents just a first step; the protection of biodiversity has to be a constant aspect in legislation and in every action taken.
In order to guarantee results in protecting

biodiversity and avoiding further decline, every person should contribute to a stop of biodiversity loss. Help can start with small actions, like minimizing waste and using more environmentally friendly transportation.

Car taxes: the less I pollute, the less I pay

Within ten years car registration taxes should be replaced by annual road taxes based on a common system across the European Union. The tax will be based on the pollution level generated by each car, in order to encourage the purchase of "clean" cars. This is the broad aim of the new measures proposed by the European Commission, which the Parliament will discuss during the next plenary session.
Within the EU, the reduction in car taxes will depend more and more on the pollution level generated by the car. The aim of these so-called "environmental" taxes is to change the behavior of car drivers so that they take into account the cost of pollution in the car's running costs. The more the car respects the environment, the less taxed it will be.

Contents of Eco-city Construction Plan and Outline for Preparation

Gao Jixi & Nie Yihuang, China Research Academy of Environmental Sciences

The 21st Century is a harmonious time for the coexistence of human and nature, and "Environment & Development" has become the main theme of all times in China and abroad. Healthy life and sustainable development is the main melody of the times and people around the world have a common ground in regard to the protection and improvement of ecological environment. The Chinese government attaches great emphasis on ecological environment building and protection, and takes it as one of China's four grand objectives for the realization of an all-rounded well-off society. The State Environmental Protection Administration timely brought forward the strategic mission of carrying out eco-province, eco-city and eco-county construction.

An eco-city is based on the following concepts: to change the manners of production and consumption, as well as the method of decision-making and management by making use of the theory of ecological economics and systematic engineering technologies within the carrying capacity of the ecological system; to explore all potential resources available to build up a type of industry featuring advanced economy and high-efficient ecology, a cultural background of reasonable system and harmonious society as well as an environment composed of healthy ecology and pleasant landscapes; finally, to realize the economic development and environmental protection, the material and spiritual civilization, a high integration and sustainable development of ecology and human beings under the background of socialist economy. The eco-city construction is a course dealing with gradual and organized systemic growth and improvement of functionalities. The essentials for eco-city constructions are to develop the scientific approaches for matching a city's structure with her functions by applying the principals of ecology, eco-economics and systematic engineering. The objectives thereof are to accelerate the harmonious development of the society, economy and ecological environment; and finally build up a well-off living place with sound ecological cycle. The standards of construction are "high-efficient economy, amiable environment and harmonious society".

At present, under the resolute policy of the State Environmental Protection Administration, the eco-city construction work is actively carried out around China. Eco-city construction plays a more and more critical role in the implementation of scientific development and the acceleration of sustainable development. Eco-city planning is the pivot foundation and premise for the construction work, and its reasonability and feasibility directly impact the efficiency and result of eco-city construction. The Chinese government has already promulgated the *Outline for Developing the Construction Plan for Eco-County & Eco-city (Interim)*. This paper, in line with the requirements of the Outline, is primarily based on the practical experiences and knowledge acquired in the previous work for the development of eco-city plan. The preliminary discussion is provided in relation to the main contents and preparation outline involved in China's eco-city construction so as to facilitate the improvement of eco-city planning step by step and to make the eco-city construction plan the pre-foundation for the eco-city construction.

General Requirements for the Preparation of the Eco-city Construction Plan

Give priority to handleability

Handleability, namely practicability, indicates whether the plan can be finally implemented by the local government and become the reference and key factor for the environmental management departments to

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direct their practice and enhance the management work. Therefore, the handleability of the eco-city construction plan must be emphasized. During the process of plan preparation, not only a clear objective but also specific implementation scheme and measures are required; it's not enough to have sufficient theoretical references, we also need to consult each relevant department and local scholars for suggestions.

Prospective Study

Eco-city construction planning shall not only put forward the corresponding strategy plan, scheme and countermeasures according to the indexes for the eco-city construction, but also establish a feasible long-term development strategy and a particular scheme that takes into consideration the achievements in some advanced domestic cities and other regions in advanced countries so as to achieve a prospective layout.

Rich strategic features

The eco-city construction plan shall be strategic and have a far-reaching foresight over the eco-city construction issue to embody its macro, long-term and strategic characteristics; moreover, it will be constantly instructive for the eco-city construction and the materialization of its flexibility which will leave more space to the government's decision-making with the purpose to avoid the stiffness and short-term consideration of the plan, which might eventually limit the sustainable development of the city.

Scientific connotation

The eco-city construction plan shall tally with the theory of ecology, the theory of ecological economy, the principle of landscape ecology, the human-oriented theory and other scientific ideas and principles to ensure a scientific connotation and the feasibility of the plan.

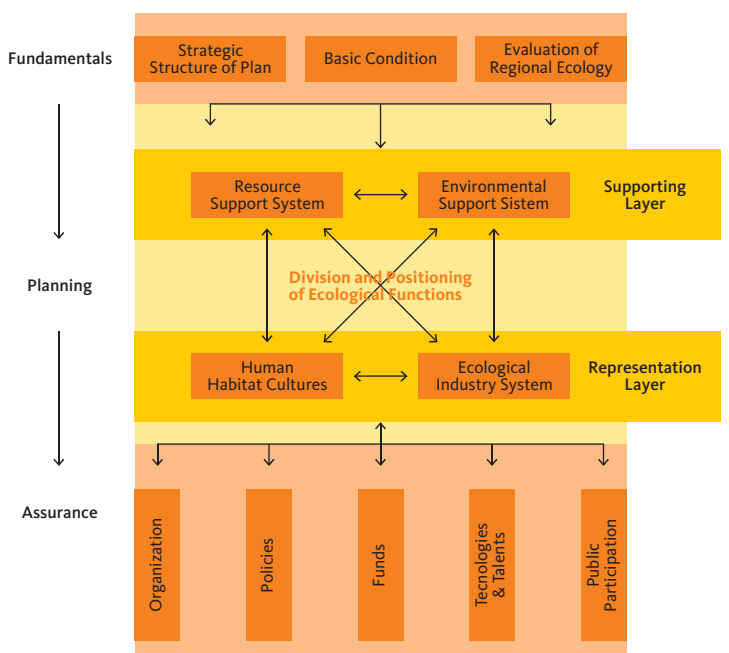
Embodiment of its characteristics

Eco-city is a general concept. Different regions, cultural backgrounds and levels of economic development could have various interpretations of the characteristics for eco-city. Therefore, it is recommended to take into consideration the actual condition when preparing the eco-city plan and make proper adjustments as for the representation model, structure and objective of the plan and make efforts to embody the characteristics of the local region.

Main contents and framework of eco-city construction plan

The eco-city construction plan is mainly composed of 3 parts, namely "Fundamentals", "Planning" and "Assurance". The section "Fundamentals" describes mainly the framework of the guiding ideology, the objectives and principles, etc.; it introduces the features of local physical geography, and the social and economic situation; it analyzes the harmonious level and carrying capacity of the complex system composed of economy, society and environment. The concepts and the framework of the eco-city construction plan are established according to the scientific mapping-out of the urban ecological functions and the analysis in the section of "Fundamentals", taking into consideration of the environment and resource supporting systems noted as the supporting layer in the diagram and the ecological industry system and social & culture system as the representation layer. Integrated approach is adopted by applying the principals of ecology, systematic engineering, recycling economy, eco-bearing capacity, eco-culture and eco-human habitats. The purpose of the section of "Assurance" is to ensure and boost the implementation of the eco-city construction plan step by step through the reinforcement of organizational management, policies and regulations, funds and technologies as well as talents and knowledge

Fig. 1 Framework of Eco-city Construction



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Outline of plan preparation

Overall Strategy & Function Positioning

The overall strategy and function positioning are the core elements of an eco-city construction plan, and they play critical directive roles. During the strategy making and positioning, we shall take into consideration the international economic trend, analyze the national development situation, assess the impacts from neighboring regions, and more important, recognize and carefully analyze the characteristics of the local region, since the local economy, the environment, the resources and cultures are the bedrocks and guarantees to realize eco-cities and sustainable development. Therefore, it is required to analyze the local situation thoroughly and meticulously and put forward the strategic target for the eco-city construction on a macro and regional point of view and make it more condensed.

By recognizing the economic development pace and the actual situation of environmental protection, and combining the ideology of the eco-city/province construction plan of Hangzhou City and Zhejiang Province, by paying close attention to the integration procedure of Hangzhou Bay Economic Belt and Yangtze Delta and by taking full consideration of national and international models, Xiaoshan District in Hangzhou City of Zhejiang Province established its strategic target in its ecological construction plan: participate in the integration process of the economy in the Yangtze Delta, incorporate into the development strategy of "Green Zhejiang", take into consideration Hangzhou's metropolis construction plan, build up an image of modern and influential district based on the pattern of agricultural city, science and technology-based industry and ecology, as well as diversified service industry.

According to the current economic development and the eco-condition in Anji, taking into consideration the strategic importance of the economic integration of Hangzhou Bay Belt and Yangtze Belt, in the ecological construction plan of Anji, the city is considered as the "dragon-head" and the core of the economic development of Yangtze Delta. Although it could serve as the "Factory in Backyard" of Shanghai, yet it largely lags behind the economically developed regions around Shanghai. Thanks to the richness of the resource, Anji has defined her strategic development target and function positioning, i.e. the "Backyard Garden" of Shanghai.

Division of ecological functions

The division of ecological functions is based on the dominant ecological functions and the purpose thereof is to promote the sustainable development in the city from all dimensions. The final purpose of such division is to serve the management and the essential point is to properly show the characteristics of regional ecology environment, as well as the features and causes of ecological issues. It presents the comprehensive potential of each ecological zone, advantages and disadvantages in resources, the orientation of science based development and utilization, as well as the direction and approach for ecological treatment. Therefore, it can provide scientific references for the development of regional economy and the establishment of environmental protection policies.

Division of ecological functions focuses on "What-to-do, Why-to-do, and What-level-to-achieve". Thus the policy-makers and administrative personnel can clearly understand the actual situation of the planned area, understand which area is suitable for development and utilization, which land needs emergent recovery and which area should be further developed, etc. so as to improve the handleability. Therefore, it is recommended to divide the management of eco-functions based on the eco-functions division and requirements during management, put forward a strategy in order to decide the area requiring rigid protection, the area for protective utilization and the Guided development area (separated with red, blue and green lines. Thence, it is called "3-line Strategy"), and bring forward the protective measures and countermeasures for each area (See Fig. 2).

Area requiring rigid protection (red lines)

Suspend any developing activity and other human-caused destructions which incur the degeneration of ecological functions; strictly control the growth of population; follow the principle of economy-based ecology and ecology-based economy; build up corresponding nature reserves according to the plan; rebuild and recover the undermined ecosystem.

Area for protective utilization (blue lines)

Carry out proper development under the guidance; rigidly control the land-use for urban construction; control the population and recover the ecological environment; develop ecological industry; properly develop fruit forests, commercial forests, flower bases, tourism industry, etc.

Guided development area (green lines)

Properly restrict the development and utilization; reserve partial lands for the future expansion of the city; coordinate urban development and ecological protection.

Target of plan

Take into consideration the actual local condition to set up a pertinent, visualized and hadleable stage target. The target of the plan shall be clear and explicit, and it shall be attractive enough to encourage the local government to implement the plan. The target of the plan shall cover the short-term, medium-term and long-term targets. The short-term target is mainly subject to the eco-city construction index system promulgated by the State Environmental Protection Administration. It needs us to understand the exact connotation of each index and adjust the index system according to the actual requirements in the local area. The mid-term and long-term targets mainly embody the concept of harmonious development of human and nature as well as the scientific view of development. In the eco-district construction plan of Chaoyang in Beijing, the general target is to "realize the all-round harmonious development by adopting the principals of ecological environment, ecological economy and ecological culture (3-Ecos)". Pursuing to be an "Ecological Chaoyang", the government tries to create a residence-friendly district with clean water, blue sky and tranquility, tidiness, naturalness and convenience. The stage target was also brought forward, i.e. "To meet standard for an ecological model district by 2005; meet the standard for an eco-district by 2007; achieve the comprehensive upgrade and lay a solid foundation for the realization of a residence-friendly city."

Vegetation protection and construction

The construction and protection of vegetation is the main content of the eco-city construction. In this task, we are required to attach importance to the protection of local plant species, to observe the primitive vegetation and the integration of the ecosystem and to bring ecological benefits into full play. The main contents of the plan may include the preservation scheme for non-commercial forests, ecological protection for commercial forests and maintenance of diversified biology. However, much emphasis should be paid to the combined method of natural recovery plus artificial growing during urban greening and vegetation construction.

Construction of ecological industry

When planning ecological industry construction,

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we are asked to put parallel emphasis on “economy development and ecology protection”, and to coordinate the sustainable economy development and ecology protection. Ecological industry construction can be planned in accordance with industry types to put forward the development strategy, target and specific countermeasures and solutions for ecological industry, ecological agriculture and the tertiary industry; it can also be classified according to the planning contents to advance the comprehensive planning scheme and measures for adjusting the industry structure and layout, the development of ecological industry as well as the exploration of cyclic economy.

Water ecology protection plan

Plan of water ecology protection may generally cover pollution control and ecology protection. The key points drop on the enhancement of source control and the implementation of ecological concepts; the contents of plan should cover the scheme and measures for the treatment of water-pollution source, cultivation of water-conservation concept and design of water-conservation solutions, ecological measures for watercourse treatment, maintenance of natural ecological characteristics and functions, etc.

Construction of ecological residence

Construction of ecological residence is the most immediate embodiment of “human-oriented” concept; it covers the optimization of urban-space function group, the improvement of infrastructures of towns, the construction of sustainable ecological community, etc; in some plans, the greenbelt construction, urban pollution treatment and other contents are covered in the plan of human residence construction.
No matter how it is presented, the concept of ecological human residence should be promoted in the plan so as to establish a human living environment which is close to or embodies the human habitat showing harmonious relations between human beings and nature.

Cultivation of ecological cultures

Ecological culture is based on the harmonious development of human and nature. It’s a sustainable culture and its extension covers ecological environment, ecological economy, ecological ethics and ecological morals; its connotation is the summation of the thoughts, concepts and mindsets in respect of the harmonious development of human and nature. Preparation of the eco-culture construction plan shall lay emphasis on the embodiment of local customs and features of historical cultures, and combine the concept of ecological cultures to achieve qualitative improvement and agglomeration and form an atmosphere filled with brilliant ecological cultures. In the eco-culture construction plan of Xiaoshan District in Hangzhou, the following points are put forward: meet the requirement of “create a leading metropolitan district and realize a modern Xiaoshan”; stick to the philosophy of “carry on and promote the splendid traditional cultures; encourage and enhance the spirit of hard work; cultivate and extend the concept of green ecology”; establish the concept of great culture by means of township ecology civilization, industrial ecology civilization and public ecological civilization; take the owned advantages into full play to accelerate the formation of an ecological culture system suitable for the progress of modernization in Xiaoshan.

Conclusion

The construction of an eco-city is a huge and tough systematic project. Several generations are needed to realize this target and the embodiment of its connotation is boundless. Therefore, the construction of the eco-city is for now a course and it deals on exploration and practice, renovation and improvement as well as unremitting efforts. The eco-city construction is an important means for each level of government and the people to implement scientific development, exploration of sustainable ways and realization of a harmonious relation between “human and nature”, and it is also a significant practice to improve the harmonious regional development. At present, the eco-city construction is undergoing an energetic development and it has laid a solid ground for the development of regional economy, the harmonization of the society and ecological environment, as well as sustainable development; it has accumulated considerable successful experience and set up a good model for other regions. Following the continuous development of economy, the social progress and the gradual improvement of people’s living standard, the idea of harmonious “human and nature” relation will be further accepted by people, the concept of sustainable development will be further enhanced and the eco-city construction will see in-depth development around China.

Sustainable Urban Design: the Case Study of Huai Rou New Town

M. Occhiuto, MarioOcchiuto Architetture

Introduction

The Huai Rou new town master plan, commissioned by the Municipality of Beijing, was the occasion for a deep analysis of **urban sustainability** topics in today's China. The development of the new Huai Rou has been based on the fundamental principles of sustainability, considered absolutely necessary to the building of the future town: **complexity, accessibility and adaptability** contribute to transform the idea of a **liveable town** into reality and to make it definitely **recognizable**. Today, while we are attempting to redevelop our cities which are suffering from various urban problems, China offers us a "second opportunity" to use our expertise and knowledge: new technologies, sustainable development, time processes, relation between private and public capital, consumer opinion, etc.
Chinese purchasers are participating more in international relations, projects and competitions in an effort to find a balance between quality in planning and the benefits of the market. This offers Italian architects the opportunity to approach urban development in China in a solid cooperative context. Sustainable development is turning into a value added tool capable of increasing the commercial value of areas and it contributes to supplant preconceived ideas in favour of Western know-how which is more environment oriented. Our master plan of the eco-friendly Huai Rou new town was inspired by these reflections.

The site

The present Huai Rou town is situated in the Beijing district, 50 km from the capital. The roadways linking both towns and the airport cross agricultural plains and reach the north of the nation.
This area is the inland counterpoint of coastal developed sites. Beijing's economic influence is recently affirmed as regards to Shanghai, Shenzhen and Tianjin, where the high economic growth was favoured by an optimal geographic position; however, the Beijing district must consider the surrounding important rural areas and, consequently, has the opportunity to enforce a sustainable development planning.
The regional context is defined by rural activities and the relationship with the natural environment, which means tradition and green spaces. These two elements will be the guidelines for the layout of the town.
On the local scale, these elements represent the relationship of Huai Rou new town with the existing features; on a regional scale, they embody the identifying and distinguishing features of the project.
Huai Rou new town counts about 80,000-100.000 inhabitants. The local context of this town offers good possibilities of growth due to its significant existing infrastructures: the Jingcheng Highway and the railway, bypassing on the north east, connecting the town with Beijing and the international airport. In addition, there are several streets crossing the site in the east-west direction, linking the old town to the rural villages.
The water canals protect the site from eventual overflow and can improve both the urban landscape and the climatic conditions. The electric line, crossing the town in the south, will not be considered as a bond or a restricted area. On the contrary, it will represent a spur for innovating issues, where green spaces develop into a real structuring and useful space.

All these elements helped to shape the master plan in terms of complexity: positive and qualifying factors such as the structure of rural villages, intact environment, eco-friendly use of resources, climate mitigation and preservation of the site; and damaging factors - possible traffic congestion and pollution due to the presence of a significant highway and the electric line.

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The leading design concepts

The methodological principles, drawn from the reflections on sustainability, can be resumed by the following key concepts: complexity, accessibility and adaptability support the idea of a livable and legible town, pursuing sustainable development purposes.
The sustainability principles are specified in the **Design Concepts** which make possible the real building of a sustainable town: **urban network, parks and gardens, urban layout, functional mix and flexibility** are the design-support of the project.
Huai Rou new town was planned to materialize sustainable development concepts into the following elements: private and public efficient transport systems, decrease of pollution and waste, improvement of human scale activities, use of eco-friendly technologies and buildings.
In this preliminary study, urban structure, green structure, urban layout and functional mix are not completely mature. Certainly, we need to experience the relationships and mutual effects among these elements in a concrete achievement of the work.

The Master Plan

The project extends on an area of approximately 870 hectares situated east of the existing Huai Rou. The urban structure, based on the existing roads linking the old town to the eastern villages, was improved by our **diagonal main street**, which connects the railway station to the key transport interchange.
The diagonal axis is the heart of the site layout: the main streets running to the districts and the streets linking the green corridors start from here. In addition, new green pedestrian corridors, derived from the existing water canals and the green spaces running aside the diagonal, shape a reversed "V" to the north and west of the diagonal axis.
Several urban key functions (business and administration), leisure and accommodation facilities and, particularly, mixed use buildings are situated on both the diagonal and the green corridors, forming a triangular area, a sort of linear centre with urban and green structures. The transport system interchanges are located where both green and urban structures join. The car park network linked to the eco-friendly public lines helps to reduce traffic inside the central area.
The distribution of key functions on this interlinked area improves urban quality and also contains traffic congestion, which also means enhancing liveability,

The Green Corridors
绿色走廊

since access and movement are granted by the diffused public transport system.
Huai Rou new town is characterized by the significant presence of green spaces as urban textures. These private and public green elements are interlinked and form the green structure that shapes and organises natural spaces, puts into relation the void and built textures integrating architecture and infrastructure.

The green structure components are the green corridors, green areas, green lines and green points.
1. The green corridors follow the lines of the water canals shaping a "V" that contains the linear centre of the town, but they also stretch to the districts reaching the borderlines of the town. They run into the town adapting themselves to the different activities and functions they meet; they contribute to reduce pollution (the electric line, for instance), function as a green curtain as regards to the surrounding infrastructures on the west and, finally, enhance the connection between the outskirts and the town.
The urban key structures are embedded in the green corridors: the Exhibition area; the art and culture halls; the administration buildings and tourist facilities; the Technological Park with dedicated buildings for Research and Training; the University Campus, the Residential Park and the North Residential district. The green corridors play a multifunctional role improving daily life: they provide cycle and footpaths, public transport roadways, sport grounds, areas for children etc.
2. The green area is a sort of urban park placed at the corner of the "V" and represents the meeting point of the new Huai Rou and the eastern rural areas. This site

is the interchange point among the different transport systems and the urban activities. In addition, smaller green areas also spot inside the districts, sometimes meeting a sheet of water.
3. The green lines are the streets planted with trees as roadways, tramway lawn paths, pavements, cycle paths. Trees play an important role: their height is in line with the dimension of the streets; they improve the urban landscape and protect pedestrians from acoustic pollution. The green points are the squares, the gardens and the unfilled public and private spaces that qualify the outdoor sites.

The urban layout follows the Chinese traditional street grid, as in the old Huai Rou, in the north-south and east-west directions. This orientation helps to regulate winds, improving the refreshing south eastern winds in summer and refraining cold winter winds, by the means of high buildings situated in the north. The distribution of the different types of buildings was planned in accordance with energy relief principles: to avoid mutual shading high buildings are placed in the north and smaller buildings in the south. The correct distance between the buildings enhance solar radiation: high buildings will be properly spaced and their height will decrease to south. This layout, enhanced by a mixed building texture made of residences, services and business areas also helps the spread of functions in each district. The new town turns into a lively and liveable place as ancient towns are.
The presence of facilities in each area also boosts the commercial value of the land and helps to contain systematic movements and traffic inside the town. Due to this distribution, facilities are all easy to get to: daily facilities are planned to be situated 250 metres from the residences and can be reached by foot; neighbourhood facilities are placed 600 metres from the residences and can be reached by local public transport; and finally, urban facilities are linked by the easy tramway network.
This flexible urban structure is more adaptable to the changing economic situations as it prevents the creation of monofunctional areas and consequently, the depreciation of land.

Mobility planning always influence the objectives intended for the sustainable development causes. Functional mix and short distances network are not able alone to reduce systematic traffic; therefore it is fundamental to develop public transport system, especially with tramway lines, so to grant efficient and fast connections within the town.
To reach this aim, we planned three tramway lines, backbone of the transport organization, supported by a secondary system of electric minibuses for short distances. In addition, several intermodal points were designed so to favour the use of combined transportation means. This eco-friendly transport issue not only contributes to energy relief but also reduces acoustic pollution.

Conclusions

Sustainable development and sustainable planning are the result of many complex issues and imply that there is not one unique model of sustainable town for the 21st century. The Huai Rou new town master plan was designed on the basis of local culture, context and tradition and on a set of design concepts founded on the European experience of sustainable projects, taken as keystones so to build, together with the Chinese partners, a common idea of an eco-friendly town.

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The Beijing ITS-TAP project for urban sustainable mobility: an innovative system to mitigate traffic environmental impact

Marino Mazzon, Director ITS Division, Thetis, Venice, Italy
on behalf of the Thetis-Atac-Fata-Ecotema Consortium

Introduction: traffic and environment in large cities

All major cities are faced with the growing impact that the ever increasing private traffic is having on air quality and urban mobility. Mitigation strategies cannot be the same everywhere, since choices are influenced by several parameters, including political, social and economic aspects, as well as urban development, geographic, environment and mobility issues, just to say some.
Central districts of Asian large cities are severely congested and, as we all experience daily, environmental aspects are often becoming serious, with impacts not only on quality of life but also on public health. Since better mobility and air quality improvement go together, a growing number of cities are becoming the scene of experimental ITS initiatives aimed to tackle this problem, and in many cases the approach is to limit access to private traffic in favour of an improvement of public transport service, both in quality and quantity.
Chinese cities look not immune from these problems, especially those with a high rate of development.
There, moreover, traffic is the result of a combination of vehicles of all types and ages, hence implementation of innovative ITS applications could be as well considered, to improve mobility and environmental conditions.

Air Quality and Traffic in Beijing

In Beijing, congestion and environmental issues are of particular concern, not only for the above-mentioned reasons but also in view of the "Green Olympics" initiative launched by the Government.
The City of Beijing has a total area of 16,800 km2 out of which 500 km2 are built up areas. The population is approximately 13,000,000 including roughly 7,000,000 in the built up areas. Beijing counts approximately 2,000,000 motor vehicles, a number in steady increase. Of these, 50% of the vehicles are older-type ones with tail gas emission far exceeding European Standard 1.
Due to the high density of population, energy consumption and vehicles in the built area, the situation of air pollution in the downtown area is rather critical.
The days in which Beijing met the national air quality standards accounted for 55% of the whole year already in 2002.
The improvement of air quality is one of the priorities of the Beijing Municipality moving towards the hosting of the 2008 Olympic Games.
In this scenario, an innovative pilot project called ITS-TAP (Intelligent Transport Systems for Traffic Air Pollution), has been launched in January 2005, within the Sino-Italian Cooperation Programme for the Environment between IMET, the Italian Ministry of Environment and Territory, and SEPA, the State Environment Protection Agency.
The project is being executed by a Joint Venture of Italian companies led by Thetis, a system integrator Company based in Venice.

The ITS-TAP concept

The aim of this pilot project is to contribute to the reduction of traffic generated air pollution in the city centre, by means of integrated management of air quality monitoring, traffic control and public transport.
The area of concern chosen by the Beijing Municipality is the second ring road, as shown in fig. 1, which is some 10 x 10 km wide.
The project innovative aspect is to activate a dynamic strategy on condition, based on actual traffic and air quality field measurements and a traffic-environment predictor model.
So, when air pollution is predicted to exceed given thresholds, two actions are actuated for a variable time

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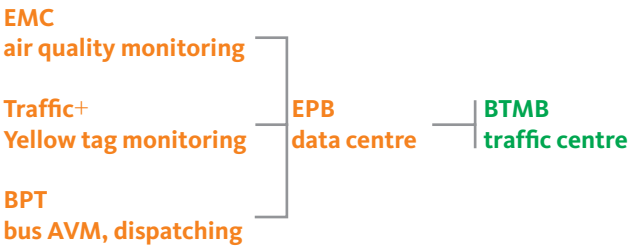
period in order to recover the situation:
_ prevent private cars from entering the city central area within the second ring road for a proper period of time. The restriction is not generalised but limited to the most polluting cars, the so-called “yellow tag” cars.
_ boost bus public transport service.

ITS-TAP: an integrated system

To reach the objectives, the ITS-TAP System is made of (fig. 2):
1. an air quality network: 6 fixed stations, 3 unconventional mobile stations, 30 saturation stations and 3 sensing instruments for vehicle emissions dynamic measurements. Parameters measured include typical gas and particulate matters, meteorological data, atmospheric stability data.
2. a traffic counting and monitoring network: there are 22 section control portals, installed at the 22 roads entering the Second Ring Road. Each section is equipped with triple radar sensors (doppler, ultrasonic and passive infrared) for vehicle count and classification, as well as CCTV equipment to automatically read the plate number of vehicles entering the ring road. Plate number is compared with the yellow-tag vehicle database, to fine those vehicles violating access-limiting rules when entrance is forbidden.
3. a bus fleet management system (AVM) for a sample fleet of 200 buses of BPT, the Beijing Public Transport Co. allowing to optimize public transport planning and to localize vehicles in real time. Optimization and service real time control are expected to reduce fuel consumption and hence emissions, besides improving perceived service quality and attract more passengers.
4. a Data Center, that collects all data and uses the air quality and traffic field data to predict, using a mathematical model, the expected levels of pollution thus giving the competent authorities the opportunity and the time to enforce traffic restrictions and optimize Public Transport operations when deemed appropriate.

The users

Who will use the system is a quite interesting case of positive agreement among Administrations and this should be considered a best practice of pragmatism. Those involved are, as seen in fig. 2 as well:
1. EPB, the Beijing Environmental Protection Bureau, that operates the Data Centre and the Predictor Model and supervises the traffic counting and monitoring network;



2. BPT, the Beijing Public Transport Holdings, that operates the bus AVM system and service planning applications;
3. EMC, the Environmental Monitoring Centre, that supervises the air quality network;
4. BTMB, the Beijing Traffic Management Bureau, which based on the information of the Data Centre will activate the access limitation actions and manage the plate reading data.

Conclusions

ITS-TAP is a sustainable mobility initiative using ITS that can be adopted, among and with others, everywhere in large cities to mitigate negative effects of traffic, that are becoming now the most significant air pollution sources there.
Practical actions to reduce social costs of traffic and improve quality of life are becoming a priority

Fig. 1
The area of concern of ITS-TAP: the Beijing second ring road.
图片 1 – ITS-TAP涉及区域：北京二环路

Fig. 2
ITS-TAP system configuration
EPB
Environmental Protection Bureau;
EMC
Environmental Monitoring Centre;
BPT
Beijing Public Transport;
BTMB
Beijing Traffic Management Bureau

in all medium and large cities worldwide, hence the approaches to promote new technologies such as low emission engines, car pooling, zone access control, road pricing, BRT, urban freight distributions and the like: no single receipt is the best, while a reasonable mix of ingredients is the best way to match the city's peculiarities.
Among the innovative aspects of ITS-TAP, in particular, is the attempt to correlate directly the measured air quality and the measured traffic data, in order to proceed with mitigation effects and traffic limitation in a rational and socially acceptable way.
An advantage of this approach is the possibility to adapt the strategy to other classes of vehicles and to other requirements that could arise in the future.
The adoption of new ITS technologies for public transport dispatch and real time bus localization and management is aimed not only to save costs and emissions, but also to attract more passengers thanks to the perception of better service provided and therefore, in perspective, contribute to reduce private traffic percentage, which is a must in city sustainable mobility.
The project is expected to be completed by the end of 2006. Currently, all materials have been delivered and are under installation.

Acknowledgements
The ITS-TAP project is part of the Sino-Italian Cooperation Programme on Environment (see www.sinoitaenvironment.org), launched in the year 2000 by IMET, the Italian Ministry of Environment and Territory, and SEPA, the State Environment Protection Agency.

ITS-TAP partners
Italian JV partners: THETIS SpA, Venice (JV leader); ATAC SpA, Rome; FATA DTS SpA, Turin; ECOTEMA srl, Venice.
Chinese partners: Beijing Environmental Protection Bureau; Beijing Public Transport Holdings Ltd.
For any further information: marino.mazzon@thetis.it and www.thetis.it

Ecobuilding: The Case Study of SIEEB

Sandro Favero, Favero & Milan Ingegneria S.r.l.

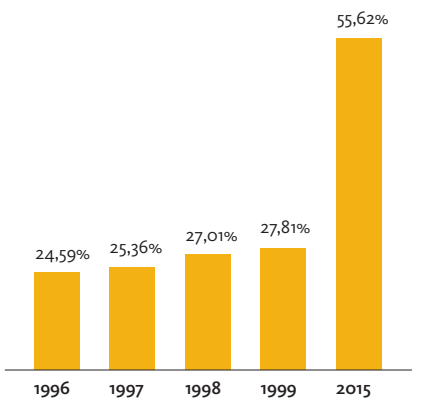
In China, the building sector is undergoing rapid expansion. Five billion square meters have been built for residential purposes between 1991 and 2000.
In just four years (1996 – 1999), total energy consumption in the building sector increased from 25,59% to 27,81% of the total. By the year 2015, it is forecasted that in commercial and residential building sectors energy consumption will double.
If we translate such data in terms of total energy consumption and CO_2 emissions, the impact on climate is clear.
It is thus necessary to create the right conditions to develop new buildings of low environment impact that integrate the Kyoto Protocol and CDM mechanisms.
SIEEB was conceived under this concept, as an eco-efficient and eco-friendly project.
The building is mainly funded by the Italian Ministry for the Environment through the Sino-Italian cooperation program of and co-funded by the Chinese Ministry of Science and Technology.
The project will serve as a platform for the development of long-term cooperation in environmental protection and energy and as an example of the potential for CO_2 emission reduction in the building sector.

SIEEB The Sino-Italian Ecological Energy Efficient Building, Tsinghua University, Beijing

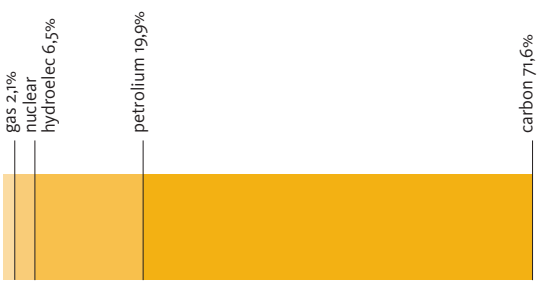
The Sino-Italian Ecological Energy Efficient Building (SIEEB) is the result of an agreement signed between the Chinese Ministry for Science and Technology (MOST) and the Italian Ministry for the Environment and Territory (IMET).
It is a "smart" and eco-friendly building and being built on Tsinghua University Campus in Beijing.
The technically advanced, environmentally friendly and energy efficient building (20,000 mq) will host offices, laboratories, an exhibition centre for Italian technologies and a conference facility.
With a total height of 40m, ten stories are above ground and two underground (Pic.1) with the first two levels for public use and house the exhibition center and a commercial activities.
Chinese and Italian architects and engineering enterprises developed the project in cooperation.

The project

The integrated designing process characterized the project aiming at attaining eco-efficient objectives.
The building takes form through performance tests



Energy Consumption in Building Sector



Energy Source

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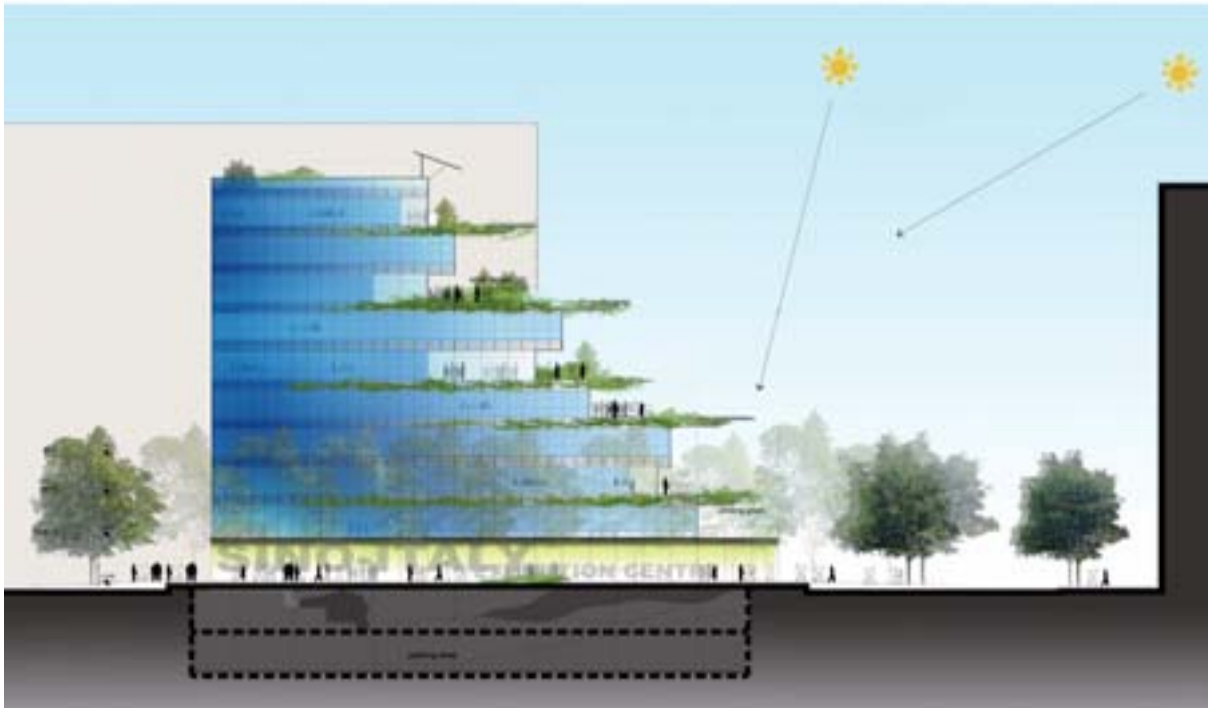
Contents of Eco-city Construction Plan and Outline for Preparation

Sustainable Urban Design: the Case Study of Huai Rou New Town

The Beijing ITS-TAP Project for Urban Sustainable Mobility

Ecobuilding: the Case Study of SIEEB



and simulations related to its shape, orientation, development, technological systems and so on.
The building was designed with the aim of combining energy efficiency objectives and best possible CO_2 emission reduction together with a functional aspect and a contemporary architectural image. Outside shell components, control systems and other technologies used express the best and most innovative expertise in Italian production.
Beside energy conservation, the building will be also characterized by:
_ Smart monitoring control
_ Better inside air quality
_ Utilization of long-lasting and environmental low impact materials
_ Water recycling
SIEEB lies in the southeast side of the Tsinghua University campus, next to the east gate, in the "Education and research" area.

Applied technology

The building is an eco-friendly model. Italian technology has been used in the systems, façade and finishings. Parmasteelisa S.p.A. built the façade.
Graniti Fiandre S.p.A. produced and installed all raised floors, while Guzzini S.p.A. provided for lighting.
Radiant ceiling system comes from Proter Imex and photovoltaic panels have been supplied and installed by Merloni Termo Sanitari.
Chillers and boilers for the mechanical plants (systems?) have been supplied by Climaveneta and Merloni Termo Sanitari.

Façades

When designing the façade, architects took into account the building general shape, as it is the result of site analysis, Beijing peculiar climate conditions and heat loss minimizing.
Four kinds of façade were designed:
1) North façade: one fold layer with isolating spandrel; single glass panel on the outside
2) East/west façade: natural ventilation double fold layer with chamber glass as inner layer and single glass on the outside
3) Natural ventilation double fold layer with outside transparent and adjustable thin plates
4) South façade: one fold layer with sunshade overhanging structures holding photovoltaic panels.

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Double fold layer façade and reflecting and semi-reflecting thin plates let the sunlight/sunrays penetrate inside the building in winter time, whereas in summer they act as a screen so as to reduce energy consumption. Special curtains made of metals enable sun light control.
Artificial lighting is based on high performance lamps and equipment. It is controlled by a regulating system able to adjust lamps power according to light need and natural light.

System used

The HVAC System

The system is based on the combination of primary air (supplied through a floor plenum) and radiant ceilings. The radiant ceiling, compared with other solutions, assures high comfort and minor energy waste.
The whole building is equipped with a Building Management System (BMS) that manages the mechanic and electric systems. In addition, sensors and CO_2 detectors allow the adjustment of airflow and the control of the ceiling temperature, in order to avoid energy waste.

The cogeneration system

Gas engines are the cores of SIEEB energy system. These engines, together with electric generators, generate almost all of the energy required. The generated heat will not be wasted as it will be used for heating in winter and, through absorption exchangers, as cooler in summer. The photovoltaic panels integrated in the overhanging structures generate part of the electric power required. A sophisticated control system manages the entire system. Thanks to the clean energy produced, the quantity of CO_2 emission per square meter is considerably reduced, compared to the standards of similar Chinese buildings.

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Shanghai Environmental Protection Bureau

Capacity Building on Clean Development Mechanism

Shanghai, March 23rd -25th 2006
38 participants

For the first time in Shanghai, the training on CDM, held from March 23rd to 25th 2006, provided comprehensive and systematic lectures to the participants belonging to various agencies related to CDM projects in the Chinese city, such as government officials, potential CDM project owners from environment, energy, electricity, wastewater, chemical, steel industries, as well as representatives from consultative sectors as universities, research institutes and consultation firms. The training course provided opportunities for the participants to improve their knowledge on CDM projects while favouring the communication and dialogue among all those involved.
As one of the three flexible mechanisms in the Kyoto Protocol, CDM provides developing countries with funds and technology from developed countries to improve the energy efficiency and application of renewable energies so as to reduce the emissions of greenhouse gases. CDM has gained positive responses in many developing countries. It is inevitable that China and Shanghai will speed up the cooperation on CDM projects. Capacity building on CDM will definitely promote CDM projects in Shanghai and in the rest of the country; meanwhile, it will help to build up a platform for future cooperation among various stakeholders. It is of vital importance to foster the burgeoning CDM market in Shanghai.

Sustainable Urban Development

Italy, May 27th -June 10th 2006
19 trainees

Shanghai is experiencing a rapid economic growth and a population boom, imposing an ever growing burden on urban environment. Shanghai Environmental Protection Bureau (SEPB) considers the sustainable urban development campaign a crucial strategy for today's Shanghai. Therefore, sponsored by IMET, SEPB and VIU devoted a specific training session to sustainable urban development in which 19 trainees from SEPB attended a two-week advanced training program in Italy. Experts from Italian governmental agencies, institutions and companies delivered lectures concerning theoretical tools of sustainable urban development, local strategy on environmental management, urban energy policies, sustainable transport, medical waste management, eco-agriculture technologies, etc. During the lectures, the trainees had a specific discussion with every expert on the relevant topics. This training program featured many site visits as well. These visits

included the Lagoon in Venice, domestic waste collection and disposal facilities, Turin Olympic buildings and the Agroinnova centre in Turin University. Such on-site interactive visits helped all the participants to have a quick access to the advanced concepts, technologies and management experiences of Italian environmental protection. Case studies of the Sino-Italian cooperation projects introduced in the lectures were another highlight of this training program, such as the eco town project of Huairou in Beijing and the eco-island project of Chongming in Shanghai. In particular, Chongming island project raised many questions and heated up the discussion in class, which undoubtedly contributed to a better conceptual understanding of sustainable development, as well as the potentials and problems in Shanghai's sustainable development from the perspective of foreign experts.
The participants in the training session were senior government officials or institutional experts involved in Shanghai's environmental protection. All of them believed that not only had they acquired the latest information and development trends as for environmental management in Europe, but also updated their knowledge on environmental issues through the training program. It is expected that the trainees will combine what they have learnt in Italy with current environmental policies in Shanghai, which is crucial in the process of enhancing local management capacity in the near future.

Ministry of Science and Technology

Energy Efficiency and Renewable Energy

26.feb 2006_11 mar 2006

Yan Changfeng
Vice Research Fellow
Guangzhou Institute of Energy Conversion, Chinese Academy of Science

The training program has enabled the participants to thoroughly understand the application situations and their related energy policies concerning solar, biomass and wind energies, geothermal energy, hydrogen, solid waste disposal, and energy efficiency of ecological architecture, which may fill the gap between the two nations and present different solutions concerning energy technologies. In particular, the trainees took advantage of on-site visits to learn more about Italian advanced technologies and new solutions in this field; they visited two solar energy demonstration projects, a photovoltaic cell manufacturer (Eni Tecnologie), a waste disposal company, a eco-building design company and a biomass power generation system manufacturer.
Cooperation between China and Italy is expected to increase and improve, based on the present program on energy efficiency and renewable energy. The trainees fully enjoyed the lectures on the matter, the site visits and the historical and cultural tour in Italy during the Sino-Italian Energy Efficiency and Renewable Energy Training, which not only was a great learning occasion, but also an important cultural and historical interaction between two nations with ancient civilizations.
During their visit to one of the main representative countries of the Western Renaissance, the trainees were impressed, according to their comments, by Italy's ancient buildings, art and unique culture and history, which greatly differ from the Chinese. Different specific construction styles of Italian cities have been preserved, while Chinese cities have progressively lost their cultural styles and have become forests of concrete and steel,

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except for a few ones such as Xi'an and Beijing. These problems must be addressed and solutions must be found for the sake of future generations.

Capacity Building on Sustainable Development

Beijing, March 27th -31st 2006
Italy, April 1st -15th 2006
28 Participants

The 2006 Sino-Italian training on Capacity Building on Sustainable Development was jointly organized by the Administrative Centre for China's Agenda 21 and Venice International University. It consisted of two stages: the first one was held in Beijing and the second in Italy with 28 Chinese participants from 12 provinces engaged in local sustainable development.
The training covered theory, policies and regulation aspects of sustainable development, as well as case studies and site visits, imparting fruitful gains to the trainees.
According to the participants, the training activities were an excellent occasion for a comprehensive understanding of sustainable development, from theory (policies, regulations, etc.) to practice. They had the possibility to learn and understand what sustainable development really means, as well as to update their knowledge on policies and regulations concerning the matter. In a word, it was a fruitful harvest! The training not only broadened their view and deepened their understanding, but it also presented an invaluable practical experience of Italian sustainable development. It was a great promotion for their future practical job.
Finally, the participants expressed their eagerness to apply the information and knowledge acquired during the training session to their practical job, and they look forward to further trainings on this topic both for the advanced ideas and experiences and the possibility of strengthening cooperation on local and international levels in this area.

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VIU training program
Echo from Participants

Waste Management, CASS

Italy, March 4th -18th 2006, 38 participants

Water Pollution, CASS

Italy, May 13th -27th 2006, 38 participants

During the first months of the year, VIU organized two courses in cooperation with CASS. The first course focused on waste management and the second on water pollution.
The training course on waste management (March 2006) presented most of the alternatives procedures available in the EU as for waste treatment and disposal, and a wide overview of the current legislation. The delegation had the possibility of visiting several Italian regions and different examples of firms and institutions that apply the best available technologies to waste management.
The visit to Treviso's integrated waste water treatment plant was an opportunity to explore the field of energy recovery applied to waste treatment. In fact, the pilot project carried out by the Municipality of Treviso in cooperation with the University of Verona aims at increasing electricity production obtained by anaerobic digestion of the depuration plant sludges, through the addition of organic matter coming from the separate collection of urban wastes.The waste-to-energy plant visited in Brescia was another example of how the waste problem can be solved while recovering part of the energetic content of undifferentiated materials, with benefits for the local community.
Another point of view on urban waste management was given during the visit at Vedelago Recycling Center. In Italy, the legislation favours recycling over other methods of disposal, and the visit to this firm was a chance of discussing the principles of the legislation and, at the same time, hearing the working experience of an industrialist that operates in the Italian region where recycling has reached the highest percentage.
Special attention was given to hazardous wastes as well. Apart the lectures given in Venice and in Turin, during the staying in Rimini the delegation visited an incineration plant specifically designed to treat solid and liquid wastes at high temperature, in order to destroy all the major pollutants.
Venice represented the ideal location for hosting a course on water management, since the relationship with water management has always been fundamental for the development of this city. The lagoon's natural environment has been modified for centuries according to human needs and human intervention is still considerable.
Large part of the course was dedicated to the legislation on these topics. At European level, the principles of the Directive concerning water treatment were discussed. As far as the Italian legislation is concerned, several examples of water management were presented, both at regional and municipal levels.
The different implications of water pollution prevention and waste water treatment were discussed, with examples from agricultural and industrial areas. The exchange of experiences between participants, lecturers and representatives of the institutions was stimulated, giving space to interesting discussions and exchanges.

Ecosystem Conservation Training Program for Beijing Environmental Protection Bureau

Italy, June 8th -22nd 2006

21 participants

A new topic, Ecosystem Conservation, was introduced in the training courses organized in collaboration with the Beijing Municipal Environmental Protection Bureau.
The course aimed at giving an overview of the main tools and policies for the management and planning of the Ecosystem Conservation. Themes, such as policies at local, national and European levels, protected areas, environmental planning, forestry and biodiversity, financial issues on natural resources management and sustainable agriculture, were treated. Moreover, the Venetian case with its unique and fragile ecosystem was deeply discussed both during lectures and site visits.
In order to analyze and discuss these important subjects, different lectures were organized with the participation of professors from Italian Universities and experts from European and Italian Institutions involved in the Ecosystem Conservation such as the Finnish Forest and Park Service and Venice Water Authority. Many site visits were organized aiming at giving concrete examples of policies and management, both at national and local level.
In particular, trainees visited a local protected area near Venice managed by WWF and a typical fishery farm. The visit of the island of Lazzaretto Nuovo gave an example of the management of the Venetian ecosystem and in Turin, the delegation visited the National Park of Gran Pardiso.

Marine Protection, MOST

Italy, June 24th -July 8th 2006
28 participants

It was with great pleasure that VIU accepted the challenge of organizing a training session on Marine Protection, an up-to-date topic that was never covered before during these three years of cooperation with MOST.
The main aim of the course was giving an overview on the key activities and institutions deputed to the research, the protection and the safeguarding of the marine environment in Italy and in the Mediterranean Sea. Therefore, theoretical lectures covered important issues such as Integrated Coastal Zone Management, Ecological Aspects of Fisheries, Marine Protected Areas (from site identification to effectiveness of protection, and management problems), Pollution Monitoring, Contaminated Sediment Management, Marine Ecology Theories and Indicators; many site visits were also organized in order to understand how different institutions such as the Central Institute for Scientific and Technological Research Applied to the Sea, ICRAM and Genova Aquarium are implementing marine protection measures at different levels. Also, the case of Venice and its lagoon was deeply explored, as an example of the complexity of this topic.
Finally, important institutions such as CORILA (Consortium for Coordination of Research Activities Concerning the Venice Lagoon System), Consorzio Venezia Nuova for the Safeguarding of Venice and its Lagoon, the Lagoon Observatory of the Municipality of Venice and the Port of Venice were asked to report on problems and challenges of managing such a fragile and unique ecosystem as the lagoon of Venice.

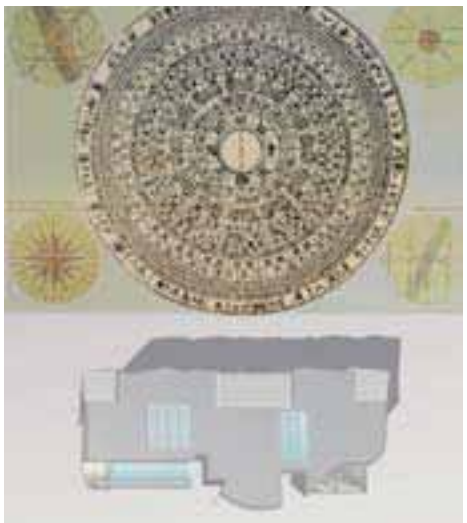
Environmental Management and Sustainable Development, SEPA

Italy, June 10th-24th 2006
16 participants

The Environmental Management and Sustainable Development training opened the cooperation with SEPA, within the Advanced Training Program for 2006. The course aimed at covering a broad range of main issues about environmental management, starting from environmental policies and regulations in the European Union, focusing then on the Italian experience and local actions for sustainable development. The case study of Venice was a good example to explore the evolution of the environmental problem in this peculiar area and the efforts to manage it in a sustainable way. Participants were provided with an overview of the main tools for sound environmental management and development, such as industrial ecology theories and applications, environmental auditing, strategic environmental assessment and sustainable urban planning. The visit to the Venice Gateway for Science and Technology (VEGA) was important to explore new opportunities in the recovery of abandoned industrial infrastructures, while the Burgo paper-mill provided a good case study concerning the possibilities to reach sustainability in the industrial sector. The importance of social aspects in the promotion of sustainability issues were highlighted by two relevant lectures about inequality and health in a globalized world. Finally, in Turin, the SEPA delegation had the chance to talk about ecological agriculture, which is now a critical issue in the effort of reaching sustainable development in China.

The China Convention Compliance Centre – "4C Building"

The 4C Building is the result of an Agreement signed between the Italian Ministry for the Environment and Territory (IMET) and the State Environmental Protection Administration of China (SEPA). This Centre will house the Chinese Authority responsible for managing the activities of the multilateral environmental agreements for the protection of global environment and sustainable development. The 4C Building is planned to be constructed in a central area of 6.754 sq.m. in Beijing, along Deshengmen West road in the north and Hongyingfang hutong in the south. The building, inspired by sustainability principles is the result of a serious consideration from the climatic, urban and architectural perspectives. The design is focused on the creation of a building with eco-friendly solutions, Italian design and high technological plants and materials, aimed at the maximum energy saving.



The design guidelines are:
_ resources saving including construction materials and water;
_ minimization of environmental impact in both the construction and in-use stages;
_ intelligent control during operation and maintenance;
_ healthy indoor air;
_ environmentally sound and durable materials;
_ water recycling and re-use.

In order to meet the design's green requirements, the use of the best technologies includes the following engineering components:
_ Facades (high efficiency glasses, ventilated facades, photovoltaic panels)
_ systems (active beams, heat recovery units, solar panels, automatic light flow adjustment system, building management system)
_ structures (recyclable materials)

Chemical Laboratory and Olympic Village Monitoring Project

In 2002 the Italian Ministry for Environment and Territory signed a Memorandum of Understanding with Municipality of Beijing for the cooperation on the environmental field and, within this framework, a technical agreement concerning environmental monitoring of the Olympic Games Village is endorsed. As host of the 2008 Olympic Games, Beijing Municipality has the responsibility to improve the city air quality to a sufficiently good level before that deadline. In order to achieve this goal and to provide support for government decision-making, the local Environmental Monitoring Center has been provided with tools to accurately monitor industrial pollutants, evaluate air quality and to effectively manage possible environmental emergencies: the Italian know-how was asked for the engineering and supply of an advanced environmental monitoring system in the Olympic village. It is composed of an advanced chemical laboratory, three mobile units (one for emergency purposes, one for industrial emissions and one for calibration activities) and a fixed station equipped with the most sophisticated equipment.

Shanghai Air Pollutant Emissions Monitoring

As one of the biggest and most rapidly developing metropolis in China, Shanghai is facing the problem of severe urban pollution and is quite determined to take all the possible measures to reduce it in order to accomplish to the 2010 World Expo motto: “Better city, better life”.
That is also the aim which is driving the cooperation between the Shanghai Municipality and IMET, acknowledged in 2004 with the signature of a Memorandum of Understanding that established a Joint Program Management Office to coordinate and monitor the activities related to each of the projects agreed in the field of air quality, sustainable agriculture, promotion of renewable energies, urban planning and sustainable mobility.
The “Air pollutant emission monitoring” project (APEM) aims at establishing an effective decision support system to control air pollution and to improve air quality in the Municipality of Shanghai, addressing in particular atmospheric emissions generated by traffic, construction activities and large coal-fired boilers.
The Italian scientific expertise has been requested to assist the Municipality of Shanghai in understanding the contribution to the pollution in the urban area of Shanghai from these three important sources and in suggesting the best technological and methodological approach to monitor the effectiveness of control measures.
The project has started in March 2006 and the parties are jointly setting up a comprehensive system for the evaluation of fugitive emissions of particulate matter from construction sites, developing a prototype system to chase polluting cars and establishing a complete set of QA/QC procedures for the continuous monitoring of emissions from large industrial boilers.
The working team is composed of experts from the Environmental Monitoring Center of the Shanghai Municipality and of Italian experts from Institute of Atmospheric Pollution of the National Research Council, permanently based in Shanghai for the specific purpose and for an effective and fast progress of the project.

Suzhou Air Quality Monitoring System

Early at the first stage of the Sino-Italian Cooperation Programme on Environmental Protection (Year 2001), IMET and SEPA signed an agreement for a pilot project in Suzhou for establishing a comprehensive Air Quality Monitoring System characterized by the most up-to-date, reliable and cost-effective technologies and methodologies according to both European and Chinese regulations.

The project, implemented in partnership with private Italian companies, started in 2002 and has been implemented in two phases focusing on technology transfer and capacity building, technical assistance and maintenance and research activities.
The first phase involved a broad preliminary assessment of air pollution, the network design of the final AQMS, the supply of a chemical laboratory, nine fixed stations, twenty saturation stations, a mobile unit, the experimentation of new equipment, one data quality-control centre, where all data collected are gathered, analysed and interpreted. The objectives and deliverables of the project to be achieved in the second phase, which will be completed by the end of 2006, include the supply of six unconventional mobile units, the supply of an emergency monitoring unit, the construction of a preliminary emission inventory of air emissions, the experimentation of new equipment, the establishment of I and II level maintenance procedures as well as cooperation activities with local authorities for air quality improvement and the implementation of the chemical laboratory.

Lanzhou Air Quality Monitoring System

The project in the Municipality of Lanzhou, started in October 2004 and represents the first achievement of the diffusion of the Suzhou pilot project.
Funding by IMET brings Italian technology and know-how to one of biggest city of the northern-west area of the Republic of China, where the combined effects of a low income and significant impact on pollution might be evaluated.
In Lanzhou the pollution conditions are highly worsened by lack of consistent financial resources, by lack of proper know-how on AQMS and by difficulties due to climatic conditions. Therefore, the local environmental protection agencies are willing to learn from the Italian experience

how to improve their ability in monitoring the air quality and manage the best practices for the reduction of pollution in non-ideal economic and technical conditions.
The project in Lanzhou aims at the supply of an AQMS network and is broadened with the development of a Greenhouse Gases Emission Inventory (GHGI), with the main goal of highlighting potential areas for CDM projects implementation.

Air Quality Monitoring Improvement (AQMI) in the City Of Wulumuqi (Xinjiang Province)

Wulumuqi is the political, economic and cultural centre of Xingjian Uighur Autonomous Region and it has a strategic importance for western China given its huge mineral resources and its being the contact area with Russian and Middle Eastern developing regions. Moreover the Municipality is representative of an area, the North-Western part of China, where lots of efforts are going to be addresses in the near future by the central Government according to the developing agenda outlined in the recent years strategic plan.
The first step will be a preliminary assessment of air pollution through low-cost and highly effective supplementary techniques (diffusive samplers) for several atmospheric pollutants (Analyst) deployed in the urban area.
Air quality management requires a solid basis of understanding of the pollution phenomena and situation. For this purpose the optimisation of the existing AQMS, assistance in procurement and network design are the main deliverables of the project. The collaboration is expected to have long duration in terms of added scientific values, to bring benefits also in terms of sustainable mobility and traffic related pollution in a very special and important region of China.
This project represents the ultimate follow up of the Suzhou experience and the last achievement in the diffusion plan of Italian technology, know-how and expertise.

Intelligent Transport System (ITS) Application for Sustainable Mobility in Xi'an

On January 21, 2006, IMET and Xi'an Municipality signed an Agreement in order to cooperate in a project regarding an ITS for monitoring the traffic pollution at the main entrances of Xi'an City and the downtown area of the ancient City and ITS application, having the objective to identify an appropriate solution to support Sustainable Mobility in Xi'an and in particular to experiment the traffic pollution control. In particular, the project has to address solutions with measurable benefits for the environmental protection and it should also be reproducible in other similar situation. The project is composed of the following activities:
_ Assessment of reference scenario in Xi'an: aiming at establishing the actual and future reference scenario including infrastructure, means and population of vehicles and environmental condition.
_ Assessment of best practices of sustainable mobility: to study some successful cases of ITS application for sustainable mobility; identification of a specific ITS solution for Xi'an: based on the results of the previous activities, establish practical alternative solutions for ITS and choose the preferred one.
_ Feasibility study of the selected ITS solution to be set up in the city.
Air Quality Monitoring is among the issues to design appropriate Sustainable Mobility strategies in modern cities. Data from different monitoring systems can be integrated in a single data centre and linked also to a simplified environmental/ traffic model. With appropriate processing and reporting software the data centre can support local authorities to analyze and give support to decision making in policies for a clean urban environment.

Atmospheric Mercury in the City of Suzhou - Its emission sources, transport and deposition at urban and province scale

In view of a global approach of the pollution problem, and strengthening the cooperation with international bodies in scientific research and in the aim of improving the air quality worldwide, IMET and the US Environmental Protection Agency are supporting the project in cooperation with SEPA. Mercury is emitted to the atmosphere and released to surface waters from a variety of point and non-point sources, it is dispersed and transported in the air and water, deposited to the earth and stored in or redistributed between water, soil and atmospheric compartments to finally reach the food chain where most of human exposure is experienced. The project aims at the measurement of atmospheric mercury in the air and in particular phase at urban and background locations. In addition, the integration of additional strategic atmospheric measurements to the existing AQMS in Suzhou to support atmospheric modelling; modelling of major chemical and physical processes affecting the transport, deposition and re-emission of mercury within the urban area and at province level are also included. The project is a follow-up of an already established agreement between the parties involved and has the potential to evolve into a mercury global fate and transport partnership under United Nations Environmental Program (UNEP) program.

VIU Training Activities September-November 2006

After the summer break, VIU Advanced Training Program is back in September to host in Italy the *Sustainable Development and Environmental Management* training for 15 selected **SEPA** participants, representing outstanding Chinese environmental institutions such as the China Research Academy of Environmental Sciences, the China Environment Impact Assessment and the Chinese Society for Environmental Sciences. The provinces of Hebei, Liaoning, Sichuang, Ningxia Hui, Hainan and Xinjiang are also represented in the SEPA's delegation, through the participation of their Deputy Directors General and Division Directors.
Sustainable Development and Environmental Management, Italy, September 2nd -16th

For the fourth year, the **Chinese Academy of Social Sciences** and Venice International University will open the new cooperation training activity for the academic year 2006-2007 on October 16th in Beijing. CASS will host an opening ceremony in which Prof. Ignazio Musu and Prof. Maria Lodovica Gullino (VIU's TEN Center President and Director of the Advanced Training Program, respectively), together with distinguished representatives of CASS will officially inaugurate the training on *Eco-Management: Strategies and Policies*. The training – an introductory session on principles and policies for Sustainable Development – is open to 160 CASS participants who will attend the 4 thematic training sessions that will later be organized in Italy. So far, the experience has demonstrated the key importance of this Beijing collective session which not only provides the basic knowledge on Sustainable Development to be developed in the future sessions but, most important, it is the occasion for the participants to meet and to start creating a network for further implementing the Sino-Italian Cooperation Program.
Eco-Management: Strategies and Policies, Beijing, October 16th -20th
Energy Efficiency and Renewable Energy, Italy, November 18th -December 2nd

On October 16th in Beijing, the training on *Energy Conservation and Efficiency* jointly organized by the **Chinese Ministry of Science and Technology** and Venice International University will also open. The one-week Beijing session is the first part of the training which will continue in Italy in the following two weeks. In Beijing, VIU will be represented by a delegation of experts on energy issues, such as the Head of the Energy Efficiency Policy Division of the Italian Regulatory Authority for Electricity and Gas, the Vice-President of the International Economic Association and the Research Director of the Institute of Energy Sources Economics of Bocconi University. They will alternate their lecturing sessions with Chinese experts who will mainly introduce China's energy situation.
Energy Conservation and Efficiency, Beijing and Italy, October 16th - November 4th

Beijing and Shanghai Municipal Environmental Protection Bureau has requested to explore in depth two important aspects of Sustainable Development: Environmental Impact Assessment (EIA) and Environmental Policy. Beijing municipality has underlined the importance, for the participants, of getting familiar with laws and regulations of EIA and its implementation, in particular on land use planning and abandoned land. Strategic environmental assessment and multi-criteria evaluation are other key topics as they raise the issue of public participation.
How the European Union has developed and changed its approach to Environmental Policy will be the focus of Shanghai's municipality training on Environmental Policy. Particular attention will be devoted to policies designed and implemented at local level and to the voluntary approach. The SEPB delegation will also visit *EcoMondo* in Rimini, the International Trade Fair on Material & Energy Recovery and Sustainable Development.
Environmental Impact Assessment, BMEPB, Italy, October 29th -November 12th
Environmental Policy: Economics, Legislation and Enforcement, SEPB, Italy, November 4th -18th