



Építészet MOST! Architecture NOW!
Renewable Sources in the Built Environment
International Symposium in Budapest
2007 October

FINAL REPORT

The Union of Hungarian Architects (MÉSZ) „Renewable Sources in the Built Environment towards a Sustainable Future” workgroup organised an international symposium – the first of such kind – in October 2007. The title of the symposium was: „Architecture NOW! Renewable Sources in the Built Environment”, and was organised in Budapest, VAM Design Center on 17th October 2007. The symposium joined the UIA (International Union of Architects) motto: Transmitting Zero CO2 Architecture, focusing on energy, environment and architecture. The one-day symposium presented low-energy and passive houses utilising renewable energy sources, which techniques significantly can reduce the CO2 emission of buildings. Built projects from UK, Germany, the Netherlands, Greece and Austria, and very promising projects were presented from USA and Hungary.

The appr. 250 audience attended the nine presentations, which covered international architectural theory and practice, the new legislations and standards. An exhibition accompanied the lectures, connecting to the subject of the symposium – the presented lectures were exhibited with further specialized products and services.

Mr. Ernő Kálmán, president of the Union of Hungarian Architects underlined the importance of the symposium in his opening speech. He emphasised the growing importance of energy and environment issues, and the responsible role of architects. In this connection he mentioned, that the president of the UIA issued a communique addressed to the 1,3 million architects worldwide transmitting zero-carbon emission architecture. The Hungarian Association of Architects supports these goals, and organises this symposium to raise awareness among architects and builders. He also mentioned, that the winner of the recently closed international competition for the new government district is a green project, which deals with these environmental issues. Mr. Kálmán stated that the architectural profession has to renew itself according to the new climate change and energy dependence challenges.

Mr. Jeffrey D. Levine, Chargé d'Affaires a.i. United States of America Embassy in Budapest, main supporter of the event, agreed that the timing of the symposium is near perfect, focuses attention to environment conscious thinking and technological innovation.

He evaluated Hungarian experts open to these problems. „It is very clear that the topics discussed here would be very important in the 21st century. The UN had a very special high level conference on climate change 24th September, and on 27th September president Buh convened world's 17 largest economies which are also the 17 largest green-house gas emitters in the world to begin discussions following Kyoto this December in Bali. The US Embassy in Hungary is willing to raise awareness as well as taking concrete steps to improve the environment” - added Mr. Jeffrey D. Levine.

In the United States many projects are realized from private initiatives and foundations, e.g. the New Orleans projekt demonstrated at this symposium. One of the best practices expert Andrew Kotchen, present at the symposium, his design for the reconstruction of a New Orleans housing project that stresses energy efficiency and renewable energies was selected from more than a 160 competitors, and demonstrates an important fact. Many of the design and technological innovations to reduce carbon emissions and utilize novel fuels in the United States are coming from the private sector. They are funded almost entirely from private funds, and attracting more and more investors interested in both corporate social responsibility and profits. This is true for many other countries, too.

Developers are also interested in new technologies, and this is important because government efforts are not enough alone for the spread of innovative solutions useful for both economy and society. Events such as this symposium help bring greater awareness to the technologies, solutions and behaviour that benefit both the environment and the economy. Mr. Levine hoped that this symposium stimulated not only the discussion and networking but practical ideas everywhere can be applied to the national unique needs. There is not only one solution to the environmental problems, but hundreds or even thousands, so the benefits of this symposium are enormous.

Mr. Sándor Fegyverneky, Chief Architect, Head of Division, Ministry of Local Government and Regional Development as the representative of the government in his opening speech noticed that „Architecture NOW! Renewable Sources in the Built Environment” International Symposium is a pioneer initiative, - „this is the first architectural symposium in Hungary which introduces zero-carbon architecture in theory and practice. Building energetics is such an important issue nowadays, that the government – according to the EU normatives – is taking several steps in creating new building codes and energy qualification” – said the chief architect. In the EU 40 % of the used energy is consumed in buildings – mainly for comfort purposes – namely heating and cooling. The rest of energy is used for production and mobility. The energy spent on comfort has a huge saving potential, and this will be architects' most important task in the near future. The system of building energetics was already formed last year, and today buildings must conform with this system during approval process. Formerly it was enough to make some heat loss calculations for walls, roofs and openings, today it is a relatively complex work. University training is according to these new requirements. This year's task is to announce the qualification system of buildings regarding energy efficiency. This legislation is ready, and under EU control and comparison with other countries' building codes. In the foreseeable future the qualification of energy efficiency of buildings will be started. This means that teams of architects and mechanical engineers will evaluate the level of efficiency of the buildings. What mark the building gets will depend on the overall consumption of the building. The protection from overheating of the buildings is also very important task for us, architects, specially now, when climate changes. Previously architects' main concern was winter, now summer overheating is becoming a serious challenge. The architectural team of the Ministry of Local Government and Regional Development together with the Technical University of Budapest last year produced architectural guidelines to protect buildings from overheating. The new building code OTEK, from 2008 will require approval

for the placement of active cooling components, to control visual appearance and protect urban landscape, but passive protection is recommended. Mr. Fegyverneky emphasised the importance of the „Footprint Theory”, as sustainability is the core of future environmental and architectural behaviour, including town planning. The one day programme demonstrates excellent examples of environmental, energy and climate conscious designs and built projects from Hungary and abroad. Passive heating, ventilation and cooling techniques, integration of renewable energies, new materials, innovative equipments and other green solutions are presented at the symposium. Buildings and cities – the built environment - account for nearly half of the world's CO2 emission, and can be regarded as the main cause of climate change. Today with available technologies and knowledge we can significantly reduce the energy demand of buildings. With efficient use of energy the greenhouse gas emission can be reduced. The government and building division is determined to support the construction of high quality, zero-energy and passive houses – e.g. with the good example of the new government district – which contribute to sustainable development as well as increased competitiveness of the building sector. In order to achieve this goal, the government would like to publish guidelines, and wish to handle the complex issue of training, qualifying, regulation and taxes together, and wish to achieve the growing number of passive and zero energy houses and buildings, and support the reconstruction of the existing housing stock according to these principles. Architectural profession has to be renewed in order to create a sustainable environment.

Mr. Nikos Fintikakis, architect, UIA-ARES (The International Union of Architects) director of ARES workprogramme (Architecture and Renewable Energy Sources), from Greece, presented his richly illustrated lecture with the title „Renewable sources in architecture”. At the beginning he introduced the activity of the UIA:

Five continents, 95 national sections give the membership, work is carried out in 15 work programmes, one of them is Renewable Energy Work Programme, which maintains professional contact with various EU institutions, research centers and Universities. Architects have a very important role in the shaping of environment. The architects are not innocent in the shaping of unlimitedly growing cities, where people have lost their natural sense of orientation. Urban climate is defined by buildings and traffic. Architects should re-define the architecture of the new age.

As Director of the International Work Program “Architecture and Renewable Energy Sources” (‘ARES”) of UIA, Mr. Fintikakis presented the activities of UIA in this field accompanied with examples and principles’ applications of Bioclimatic Architecture, which incorporate the philosophy of this design, according to the new directive of the European Union.

The audience was introduced to the recently closed UIA-ARES international competition's winning entry design. The subject of the competition: renewable energy sources and bioclimatic architecture for the shelter of people struck by ecological disasters.

Under the project of the unification of archaeological sites of Athens, their office have been entrusted with designing the enhancement of the area of the renowned ancient Athenian cemetery in the Kerameikos area and its integration into the surrounding modern urban tissue (2003). The Kerameikos area in the center of Athens plays a significant cultural role in the contemporary life of Athens and our design was based in the interwinding of the past and present tissue through the creation of a green hole of the past and therefore we discovered and expanded the ancient buried urban tissue. Emphasis was placed on the different ways in which the streets are treated as solar and wind streets in accordance with their orientation, their plantations, their pavements and their history, of course. Special designs have been provided concerning the use of cool materials as well as special

plantations for absorbing the pollutants. The pedestrian area is covered by local stones of white-gray colour for avoiding the absorption of sunrays.

The same idea of solar and wind streets was proposed for the Olympic Village in Athens 2004.

The design for the bio-climatic principles foresees graduated planting of the streets under pergolas, depending on the movement of the sun and the wind, as well as making provision for water zones for additional natural cooling and an extensive use of green envelope of the buildings.

It is calculated that the ambient temperature is reduced by 4°C, the maximum wind speed has been reduced by 3m/sec, while the period during which the Olympic Village is in a state of comfort zone has been increased by 65%.

The green building envelope prevents the overheating of the outer surfaces and provides an adequate shade to the pedestrians. The buildings are painted with cool colours. The terraces and roofs are covered with pergolas and ceramic tiles. A full system of natural ventilation and natural lighting is provided after a specific simulation programme.

In idyllic Athens of the 5th century B.C. Aristotle codified the theory of the presocratic philosophers on the value of the 4 basic elements fire (sun), air, water, earth and the 4 basic qualities hot-cold, dry-wet.

Aristotle in his theory of the cosmos states that it is possessed by the influence of nature that organized everything in the most proper manner. This world with its mountains, waters, plants, animals and humans became the most worthy subject of his theory, by which the environment dominates architecture.

Today, 2,500 years later, what else can we do but invoke respect for the environment, as we wander in the landscape of the architecture and urban planning of the future?

The theory of the four elements as well as historical architecture starting from Mexico – Teotihuacan should be the inspiration for more environmentally friendly interventions by architects and planners. This metropolis of 200.000 people was built during the Maya period and is the first solar city of the world, with the pyramids of sun and moon.

The responsible approach to nature and the use of renewable energy sources are indisputable necessities today, which must affect virtually every modern activity of man. The role of architecture, as a responsible profession, is to find the interpretation of this necessity in the sector of designing and organizing the built environment.

New design models can be developed as knowledge of how to exploit the natural elements as sources of light, cool and warmth increases. Moreover, in order for the public to accept environmental and ecological technology as a new modern and viable conception in construction, there have to be actual examples and applications of these ideas for it to see. The form of the built environment of the future can be based on a responsible approach to nature and on the use of the renewable energy sources.

Bio-environmental and ecological architectural design can and must intervene in this situation, not only in the formation of ekistic shells but also, more broadly, in the formation of major infrastructure works, which in many case constitute the maximum disturbance of the natural environment. This philosophy of design should not aim simply at technocratic improvements but at formulating design principles for a more substantial approach in the direction of environmental and ecological equilibrium.

Mr. Alan Shingler architect, Director of Sustainability of the London based Sheppard-Robson Architects presented his emblematic first net zero-carbon house in the UK. This relatively small project is very important, because from 2016 only such construction – zero CO2 emission – will be possible, according to the new building regulation in the UK. Starting from 2008, there will be a six-level scale, and new buildings have to reach step by step the goal: energy and water conscious construction. With unrivalled levels of

efficiency in terms of the construction method, energy use, CO₂ emissions and carbon footprint, this high performance, prototype sustainable home is the first to achieve the Code for Sustainable Homes Level 6, the standard to which all new homes should be designed and constructed by 2016 in UK.

Lighthouse prototype is a two-and-a-half storey two/three-bedroom house, part of a family of houses and apartments of sustainable communities. It creates a new model for future living, challenging the traditional house layout to encourage lifestyles which are inherently 'light' on the world's resources. It's simple barn-like form derived from a 40 degree pitched roof accommodating the PV array. It is constructed using a high performance SIPs (Structural Insulated Panel) based system which will provide a high level of thermal insulation. The architectural central design concept is a generous open-plan, top-lit, double height living space. The Lighthouse situates the living space on the upper levels making the most of the light with sleeping accommodation at ground level. In addition to achieving Code Level 6, Lighthouse is future-proofed to address predicted increase in temperature due to climate change. This is achieved through the incorporation of a wind catcher providing passive cooling and ventilation and bringing daylight and reflected sunlight into the heart of the home and supported by window openings on the east and west elevations, shaded by balconies and shutters to restrict direct sunlight and heat gain. Terraces and gardens are also located on the east and west elevations to benefit from sun and shade in morning and evenings. Integrated building services include water efficiency techniques, such as low volume, water efficient sanitary ware and appliances, renewable energy technologies, including a biomass boiler, building integrated photovoltaic (BIPV) and solar-thermal array, and mechanical ventilation with heat recovery (MVHR). Services in the Lighthouse will also be integrated with smart metering and monitoring, which records energy consumption and enables occupants to identify if any wastage is occurring, helping to promote more environmentally aware lifestyles.

László Szekér architect, Hungary. presented three projects in the following lecture with the title: Integrating renewable energy sources in architecture. Innovation and tradition were the keywords. The first showcase building is the Főtliget net zero heating cost office building. This zero heating cost office building concept – under design, before construction – targets to achieve zero CO₂ emission requirements with the use of renewable energy sources, due to the outstanding insulation qualities of Neopor based extreme insulation.

The three level appr. 1200 m² floor area building has a shop, snack bar and coffeeshop on the ground floor, with services and offices on the upper floors. The intention is to create a sustainable, economic and appealing building. In order to achieve this goal, the circulation is optimized, interior arrangement is flexible, mechanical services and staircase is concentrated in the core of the building for efficiency, structure is superinsulated and use integrated renewable sources. The simple, compact form, low angle pitched roof, superinsulated structural concept avoiding cold bridges reduces auxiliary heating requirements. Special attention is paid to avoid summer overheating with the carefully designed shading and passive cooling system with shading devices, including a „solar umbrella”, adjustable shutters and green facades. The appr. 200 shading solar pv panels cover a significant portion of the building's electrical power need. Heat recovery ventilation system combined with heat pump provides healthy interior climate economically. With the help of a phase changing material – Micronal – the heat storage capacity of interior structure is increased. The building utilises rainwater and grey water, using water saving sanitation and equipments, artificial lighting is provided with compact and LED sources.

Vegetation has an important role: the south facing pergola is covered with vegetation to protect cars from direct sun beams, the parking lot has reinforced green surface, there is an intensive roof garden on second floor and green facades help to shade, evaporate and cool. The intelligent meters monitor energy and water consumption. The building serves demonstration purposes as well, and will help to spread energy and environment conscious architecture. The second building is a small motorway maintenance center, with zoning plan, compact building envelope closed to the north, south facing shaded openings with triple glazing, and recovery ventilation. There is no gas supply, boiler chimney, or conventional heating system. Heating and cooling is solved with geothermal energy and heat pump, and rainwater collection, integrated PV and wind turbine increase energy efficiency. Last but not least an energy conscious atrium house was presented, which applies Hungarian building tradition like "tornác", inner courtyard floor plan, wood burning fireplace with extra insulation and recycled bricks. The floor plan and wide overhangs reflect the inspiration of the great american architect Frank Lloyd Wright's Usonian House.

Martin Rührnschopf, architect from Austria, expert of ecological passive houses, started his lecture presenting the cultural role of architecture, as the key to environment.

Energy is discussed at public discussions and special exhibitions. Energy consumption, depends on the part of building construction (including production and transport of materials, lighting, room heating and cooling, water heating and demolition) amount to 60% of primary energy, mostly produced by non-regenerative sources. Which answers and solutions architects can provide - now?

The answer to this challenge is required on different levels: Urban-planning, public buildings, commercial buildings, all kinds of dwellings and of course the "building" of awareness for ecological architecture.

His personal answer is simple and consequent: ecological passive-houses or low-energy houses for private customers (new or renovation). There is a direct communication with the clients, the projects can be realized speedily and one can always experience the personal satisfaction and development of the families.

The design and the construction of individual passive-houses is a complex and accordingly expensive process. The method of "simultan planning" is an interdisciplinary, interactive, integrative, innovative and intuitive way. He is working with an interdisciplinary team, including specialists for energy, construction, geomantic and very important - the clients. The holistic and playful work with the power of intuition brings logical and beautiful solutions very quick.

Intelligent room-concepts and constructions, good proportions, the power of sunlight, avoiding of heat losses, consequent sun protection, the use of natural materials (wood, clay, cellulose, straw, flax, ecta.) and regenerative energy-concepts will bring timeless architecture, a part of culture and by the way sustainable "eco-logical" solutions.

Prefabricated elements, well-known connected teams and a construction management including of course a blower-door test, make possible that a building site is going on very quick and successful for all involved persons- and the environment too.

He has won several prizes in Austria recently.

Thorsten Schütze architect, arrived from the Netherlands, University of Delft.

He stressed, that the discussion about *Sustainable Architecture* and *Zero Emission Buildings* is generally focusing on the energy consumption and the related (greenhouse gas) emissions of buildings during the service phase, for heating and/ or cooling, hot water production as well as for electricity consumption. Optimization of the building design and

building construction, the use of renewable energy is crucial. The practical and economical feasibility of such concepts is practically proven and feasible. However the emissions of the water system which have significant effects on the environment are mostly ignored. Hence it is crucial for the realization of Sustainable Architecture and Zero Emission Buildings to implement ecological sanitation and water systems, including the decentralized management of rainwater.

Centralized systems for sewage treatment and water supply have many disadvantages. The most important are that sewage streams with different noxiousness are mixed and nutrients are either eliminated or discharged in water bodies. Leakages in the sewage system, overflows of mixed sewers and treatment lead to the contamination of ground- and surface waters with pollutants. They incur high costs and they are not safe against catastrophes.

New developments in sanitation technology as well as decentralized water management and energy production have created new opportunities for the application of decentralised ecological sound infrastructure systems in buildings. With technologies for decentralized rainwater and waste water conditioning, the construction of sewer systems and central waste water treatment plants can be avoided. Due to the comparable low energy demand of decentralized water systems, the required electrical energy demand for those systems can be easily and with high reliability provided by decentralized power plants, e.g. by photovoltaic systems, building integrated photovoltaic components.

The Hungarian developments were presented with the award winning scheme of the New Government Quarter by **Peter Janesch** with the **Minusplus** studio and **Kengo Kuma** japanese architect, and with **Attila Ertsey's** "green" concept. The winning entry of the recent New Government Quarter design competition has characteristic green elements. If realised, this project will be the biggest energy conscious building complex of the continent – using passive techniques and renewable energy sources. The Budapest located 6 story high building complex is 400 meters long, includes 54 inner courtyards and will be the home of eleven ministries and thousands of office workers. „Spiritual strenght radiates from the design, which is open to the structural changes of the future. In this aspect this building is revolutionary. Energy consciousness and sustainability can be traced in every detail. It uses every tool: from the structural form of the site layout to the mechanical engineering solutions, the design is clever and efficient”, evaluated the jury the competition winner. The green architectural concept is visible on the outside of the building indeed: green facades and roofs improve the micro climate with evaporation and shading. The building is maintained with passive heating and cooling techniques, has extreme insulation and heat recovery ventilation. The air is preheated with the thermoactivation of the earth and deep foundation and pipe system heat pumps. The climate facade helps to smooth climate in winter and summer.

The rooms are equipped with surface heating and cooling. Hot water is supplied with solar collectors and distant heating. The designers utilise rainwater, earth water and cleaned greywater. Waste is selectively collected and recycled. Electric power is generated with pv panels, lighting with energy efficient light bulbs. The goal is to maximise the use of natural daylight. Cooling is a serious task, since cooling load is three times bigger than heating. The building complex has to be built on a narrow plot with rocket speed, and this means a big challenge for the designers and the builders. The audience had the opportunity to hear new elements of the design from the presentation of **Mr. Ákos Schreck**, one of the designers. Green features were introduced by two experts **Mr. Imre Molnár** and **Mr. György Molnár**, with special emphasis on geothermal energy utilization.

Mr. Roland Leuck energy engineer of Luwoge Consult GmbH., Germany, presented several demo buildings, including the zero heating cost building, and other passive houses. The experimental zero heating cost multi-dwelling house block is an energy efficient renovation of an existing block house in Ludwigshafen. The modernisation is profitable for the tenants: they pay no more heating bill in the future. The inhabitants could stay during the reconstruction, because the electrical and mechanical installations were fixed on the outside of the structure under the insulation. The concept of insulation includes 50 cm Neopor insulation on the roof, 30 cm on walls, and 16 cm on basement ceiling. There are no radiators in the flats, the air exchange with heat recovery minimizes ventilation losses. The auxiliary heating is provided with electrical heating hidden in the triple glazed insulated windows, powered by the pv panels situated on the flat roof. There are adjustable insulated shutters in front of the windows to increase insulation properties and control light levels. The centrally drawn inlet fresh air is preheated/precooled underground before entering the building.

Centrally produced domestic hot water is also cheaper, because of the solar collectors mounted on the south facade of the building. Initial building investments pay back quickly because of the reduced bills. The levels of insulation and variations of other improvements are tested on different buildings, to achieve 12, 7, 5, 3 or 2 liters consumption (liter heating oil/m²/year). Comparative analyses examine the effects of measures related to payback, loans, rents and bills. Due to the increased value of the flats, the vacancy risk is reduced from the average 25-35% to 4-5%, in spite of the higher rent - as a side effect of energy conscious renovation.

Determining the profitability and energy efficiency of investments is one of the services energy consultants can provide in order to prepare sober-minded economic and engineering solutions for different projects.

Mr. Andrew Kotchen presented a very inspiring lecture: Reconstructing New Orleans with sustainable, modular, affordable housing. In addition to focusing on sustainable building, Andrew and his partner Matthew Berman specializes in high-end residential renovations, new home construction, and commercial development. They also designs custom furniture, lights and landscaping. Matthew and Andrew have been invited to speak around the world about their unique take on rebuilding New Orleans with 'green' architecture and their revolutionary approach to bringing ecologically sound design to low-cost housing.

The development is the brainchild of actor Brad Pitt and Matt Petersen, president of the environmental activist group Global Green USA. Last year Pitt and Global Green cosponsored a competition to design and build a sustainable neighborhood in New Orleans. After reviewing proposals from more than 160 designers and getting input from local residents, a panel of expert judges picked the GREEN.O.LA plan from Berman and Kotchen, partners in Workshop/apd. One year after Katrina, there was a blueprint for not only rebuilding a New Orleans neighborhood but for making it better than before.

Located in the Holy Cross section of the Lower Ninth Ward, the GREEN.O.LA project will consist of one 12-unit multifamily dwelling, six single-family homes, a day-care center, and a community center with small-business services.

Ecofriendly features include rooftop vegetation and solar panels to generate electricity, solar water heaters, a rainwater-collection system, and a centralized geothermal system to circulate water and moderate temperatures in all the houses. Together, the residents will use a community garden and compost heap, a farmers' market, and a recycling center.

One of the most innovative ideas is that the housing will be built in a variety of designs from modular units that are prefabricated offsite with the most sustainable materials available.

Miss **Gyöngyvér Kazinczy** architect talked about the progressive development ideas of the Hárskút Renewable Energy Centre. The Renewable Energy Centre at the rural Hárskút opened two years ago with the aim of creating and operating an economically and environmentally sustainable showcase farm. The demonstration park provides possibility for the visitors to get acquainted with the various environment friendly technologies and farm processes during operation, in order to inspire them to reform their way of life. The first completed building was the Hárskút Eco-house. The 270 m² floor area reconstructed old house operates as office without outside energy input, solely supplied by wind and solar energy, and biomass. Energy and environment conscious design, and the use of renewable energy was the main goal of the designers of the buildings. They regarded important to use energy efficient construction and technology, to create healthy, sustainable and efficient system which fits into the environment. As a designer Miss Kazinczy designs buildings which use natural resources the most economic way. Her goal is to create buildings which integrate into the Earth ecosystem as living organisms and protect environment from pollution and waste. She wishes to cope with esthetic and technical aspects as well, to meet today's expectations. She integrates renewable energy and energy efficient building form into an organic structure to make the building complete summarised her *ars poetica* Gyöngyvér Kazinczy during her presentation to the audience of more than 200.

The audience had opportunity to ask questions after each presentation, and the lecturers answered them. Mr. Ernő Kálmán, the president of the Union of Hungarian Architects summarised the symposium after a short roundtable discussion, which surprisingly focused on water and sanitation problems. Mr. Kálmán emphasised that Hungary – because of its geographical position – has a huge natural water potential. Mr. Kálmán thanked for the invited speakers and the audience their presence and active participation at the symposium, and László Székér and his helpers for the organization. Unquestionably energy and environment has a growing importance in our life, and these issues are primarily architectural ones. Mechanical engineering is also changing together with our changing profession. We had opportunity to analyze very good examples. The presentation of Mr. Fintikakis, the director of UIA-ARES work programme reinforced us, that we are on a good path. We have to continue this way, and the first step is to publish the results of this symposium. We saw good examples from London, which is a very serious work, and received valuable information on the possibilities of the near future. A single family house may not be cost-effective yet, but in a small settlement scale it is already efficient today. We regard very important the initiatives from the neighborhood, Austria, and the ecological experiments at Hárskút, which are adapted to the special Hungarian conditions. Mr. László Székér architect presented important ideas which are present in the market already. The dutch presentation about the water and sanitation questions raised the importance of water, as a natural resource. It is very important to manage these aspects well, as we could see in the american presentation, the communication to the society has a growing importance. The government has to support these initiatives in the future. A complete system of supports, building codes, supervision, research and development policy has to be introduced, as we could see the good examples from Germany. We had a chance to examine Hungarian architecture in this

aspect during this symposium – summarised Mr. Kálmán, closing the event.

ZERO CO2 emission architecture

Responsibility of architecture

Architecture is a responsible profession – we can hear it at different forums. Responsibility requires morality. The individual is free to decide for what he or she takes responsibility.

Responsible architecture – what does it mean? We build our comfortable and safe homes and cities with diligent work, but too often against nature. Can we talk about responsible architecture if artificial environment destroys the natural one? If the built environment and the sustaining of it exhausts natural resources, threatens wild life, ruins the chances of future generations, and their quality of life, and causes environmental pollution, climate change?

Walt Whitman (1819-1982) the famous american poet wrote more than one hundred years ago: „It is the nature of things, that every realisation, every success – whatever success – brings to the surface something, which will require even more effort”. This is the dilemma of our age.

Architects face new challenges. When we talk about the responsibility of architecture, we are talking about today and not tomorrow. Responsibility requires consciousness.

Postmodern technocratic societies have to create the possibility of lowest possible energy use of buildings, cities and infrastructure, to save environment.

Architecture has to use traditional, cosmic wisdom together with newest technological achievements in a creative, artistic way. Architects have to seek and explore the ways and methods, with which decentralized, autonomous, natural, sustainable buildings and cities can be created. Buildings and cities, which will no more waste energy and natural resources, but utilize renewable sources (Sun, earth, air, water and vegetation).

Architecture has to integrate renewable energies and traditional wisdom in an organic way.

We have to set exact targets to reduce significantly the CO2 emission of buildings.

This approach has to appear in the Universities and different schools, as well as in building codes, qualifications, regulations. The use of renewable energies should be supported directly and indirectly.

We believe that energy waste in buildings belongs to the past, and change has started. We believe that architecture of the 21st century means low-energy buildings, passive houses, zero emission and plus energy houses.

László Székér
architect

*„Renewable Sources in the Built Environment
towards a Sustainable Future”
UIA-MÉSZ work programme, Hungary*

architectureNOW!



Architecture and Renewable Energy Sources International Symposium

Programme
17 October 2007

8.30 Arrival, registration

9.00 Welcome speeches: Mr. Laszlo Szeker organiser of the event, Mr. Ernő Kálmán, president of the Union of Hungarian Architects, Mr. Jeffrey D. Levine, Chargé d'Affaires a.i. United States of America Embassy in Budapest

9.15 Introduction: Mr. Sándor Fegyverneky Chief Architect, Head of Division, Ministry of Local Government and Regional Development

9.30 Transmitting Zero CO2 Architecture. Mr. Nikos Fintikakis architect, UIA-ARES (The International Union of Architects) director of programme, Greece

10.00 Net zero carbon house. Mr. Alan Shingler architect, Sheppard-Robson Architecture, UK

10.30 Integrating renewable energy sources in architecture. Mr. László Szekér architect, „Renewable Sources in the Built Environment towards a Sustainable Future” UIA-MÉSZ work programme, Hungary

11.00 Refreshments

11.15 Eco-logical architecture, solar houses. Mr. Martin Rührnschopf architect, Austria

11.45 Sustainable architecture. Dr. Thorsten Shütze architect, TU Delft, Netherlands

12.15 The buildings of the new government centre. Mr. Péter Janesch and Mr. Ákos Schreck architects, Hungary. Introduction: Mr. Ernő Kálmán president of MÉSZ. Invited guest: Mr. Béla Ádám renewable energy expert

13.00 Lunch

14.00 Zero heating cost building, passive houses. Mr. Roland Leuck, Luwoge Consult Gmbh., Germany

14.30 Reconstructing New Orleans with sustainable, modular, affordable housing. Mr. Matthew Berman and Mr. Andrew Kotchen designers, USA. Introduction: Mr. Mark Tauber, cultural attaché, Budapest Embassy of the United States of America

15.30 The Renewable Energy Centre, Hárskút. Miss Gyöngyvér Kazinczy, architect, Hungary

16.00 Facilitated discussion. Facilitator: László Szekér architect

17.00 Close. Wine reception

General information

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Architecture and Renewable Energy Sources

International Symposium



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Professional Organizations supporting the Symposium:

The International Union of Architects (UIA)

Ministry of Local Government and Regional Development (ÖTM)

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