Fulvio Zezza
President of the Symposium
Coordinator of the International Group for the Conservation of Monuments in the Mediterranean Basin (IGCMM)

The Mediterranean countries, with wealth archaeological areas, take care of historical building and ancient architectural structures which are the most visible aspect of the cultural heritage. Monument damage hazards constitute a constant threat to property that causes great economic losses. The rapid urbanization and the vulnerability of monuments in hazardous areas are matter of growing concern, as they contribute to increase considerably the costs of damage.
This is the main reason which has suggested finding the 8th edition of the symposium on an argument which is of a great interest and significance for the countries of the Mediterranean: Monument Damage Hazards and Rehabilitation Technologies. Cultural and scientific motivations have inspired, indeed, the establishment of the International Group on Monument which concentrates the attention on the Mediterranean area: the Mediterranean basin saw the birth and the growth of the great civilization of the past; Mediterranean belt contains and treasures the largest and the most important historic, artistic and archaeological heritage of the world exposed, at present, to weathering, pollution and natural risk.

The concept of protected patrimony, developed in 1970, and the Year 1975, proclaimed to be the European year of Architectural Heritage, have facilitated in the recent decades the re-discovery of monuments which in the past were not recognized to be a general interest.

The effects of this initiative and cultural engagement have left open a discussion on monument safeguard in which the IGCMM Group, which actively operates since 1989, has thought to develop its role with the dissemination of the research results finding.
To pursue the aim, the Group has involved in time universities, research councils, state organizations, ministerial divisions, museums, industries, research laboratories and firms. Representatives of all European countries attended the symposium including participants of extra-European continents as America, Asia, Africa and Australia. As opportunities, the Group stimulates
to work actively in order to give space to the international projects and to new conceptual and operative contributions among members.

Several projects have been started from the common interest for the research on monument in the Mediterranean basin and several representatives have developed research projects within EC programmes.

The strategy of the International Group has been coherent with its objective coming from the following considerations which, at the same time, explains the aim: starting from specific and necessarily by-sectors studies, the exchange of technical-scientific experiences around single topics of the research would place the studies in a wider framework, according an approach at interdisciplinary level, enriching them in the process. Being each research discipline not able to attend individually the complete assessment of the complex damage processes, the new approach has favoured the comparison of the disciplines in conservation and in rehabilitation.

The complexity of the conditions to analyse is strictly related to the fact that in conservation the stone is one of the visible aspects of the cultural heritage, as the factors threatening the archaeological sites can be multiples and depend, together with the weathering effects, upon pollution, urbanization and natural risks as landslides, floods, earthquakes and subsidence.
Opportunities

EC Projects

- Marine spray and polluted atmosphere as factors of damage to monuments in the Mediterranean coastal environment (1992-1996)
- Development of evaluation criteria, prediction and control methods concerning sea-salt effects on monument stones (1996-1999)
- Assessment of suitable products for the conservative treatments of sea-salt decay (2000-2003) - ASSET
- Assessment of desalination mortars and poultices for historic masonry (2006-2009) - DESALINATION

an interdisciplinary approach

- The spontaneous adhesion of IGCMM Group Members has promoted the organization of the Mediterranean Monuments Symposium, according an approach at interdisciplinary level
- Each discipline isn’t able to attend individually the complete assessment of the complex decay processes
- The new approach has favoured the comparison on the scientific research of different disciplines on monuments
At present, other suggestions, like those arisen out from the last symposium in Orleans, take up the activities of the Group as, for example, the aim to consider the environment and the cultural heritage a chosen topic.

In conservation, several problems are associated with the monuments in permanent contact with surrounding physical elements; the relation between environment and cultural heritage gives us more reasons to provide further measures in scientific-technical field and to increase in value the safeguarding of heritage.

Cultural heritage and environment must be considered as one; due to their uniqueness their value will increase and will bring about consistent development for the involved territories. Besides this aspect turned into a complex relationship, it is duty to re-evaluate and to highlight what nature and man have each produced.

Every research, which intends to contribute to the preservation of the building materials or that of the stability of the architectural structures, is also of fundamental interest for economic, social and educational aspects in
conservation and to plan the monumental patrimony in the territories through new proposal to elaborate the future perspectives.

Frequently, after each symposium, I have received compliments for the contribution in knowledge of the proceedings; of course, I believe that the recognition is not a personal gratification but the appreciation of your research results and that of the dissemination in interdisciplinary way. Indeed, our intention is that to confront each other beyond the thresholds of the single disciplines connecting, in common topics, the knowledge in conservation sciences. This form of technical-scientific dialogue then gives the incentive to return periodically to meet, as the span of time of about twenty-two years demonstrates.

The interest of our meetings is increased by the continuity to propose, according the correct planning of the approach to sustainable preservation of monument, arguments which include the anamnesis, the diagnosis and the therapy. Following this run each symposium debates the contributions of the more recent researches and offers the specific aspects of treated arguments of the conservation and the rehabilitation in an interdisciplinary framework. It is, indeed, extremely questionable the system to interpret only some of the aspects linked to the causes which provoke the damage processes, bounding practically the intervention to partial aspects.

The procedure of the damage processes must take into account that a monument cannot be summarized in small stone samples to analyse in laboratory; a monument, on the contrary, is a dynamic system, composed of several materials, which reacts, with its foundation, to a range of stresses in different sites and environments.
1st Symposium
The influence of coastal environment and salt spray on limestone and marble monuments

The Symposium aims to establish the complex interrelationship between the salt spray and the composition of building materials used throughout the centuries. The climatic conditions to which these are exposed and the chemical composition of rainwater have contributed to evaluate the weathering processes. The scientific experiences acquired in the different Countries of the Mediterranean Basin have improved the conservative intervention through new proposal of analytical techniques and methodologies concerning sea salt decay.

2nd Symposium
Bases: origin, alteration and conservation

The subject was the marble to which the ancient Greeks attributed nobility, and solubility, the marble that, from the shores of the Mediterranean, reached many of the corners of the world to be widely employed in monuments and architectural works. The Symposium has focused a multidisciplinary approach to the inherent problems of the origin, characteristics, employment and conservation of marble. Scientific research closely examining the use and distribution of marble, similarly provides interest in the history of the communities that occupied the Mediterranean. The contributions have discussed and analyzed the causes of marble decay and proposed the most appropriate methodologies concerning the conservative interventions.

3rd Symposium
Stone and monuments: methodologies for the analysis of weathering and conservation

The theme has focused on the methodologies for the analysis of weathering and the conservation aspects. The specific arguments include the historical, technological and structural properties of stone and monument. The analytical techniques and the investigation methodologies have been related to the environmental parameters: the methods and the products for conservative interventions have been selected considering the petrographic characteristics of the materials and the environment of the archaeological sites.

4th Symposium
New concepts, technologies and materials for the conservation and management of historic cities, sites and complexes

The aim of the symposium is to search out, to discuss and develop the most advanced concepts and appropriate new technologies and materials for the conservation and management of cities, sites, and complexes of historical, archaeological and artistic value, considering the environmental context, and in particular in the Mediterranean region. The main purpose of this Conference is to develop a new interdisciplinary working methodology.

5th Symposium
Protection and Conservation of the Cultural Heritage of Mediterranean Cities

The symposium has focused on the methodologies for the analysis of the cultural heritage of Mediterranean cities. Techniques and conservative proposals, using clays and new products for treatment and cleaning (i.e. laser for stones and patina) have been considered. New approaches for the evaluation of stone decay and building materials (brick, mortar) have been evaluated. Some topics are devoted to economic, social and educational aspects of the Heritage Conservation and on the management of monuments in the City of the future. Other aspects for the monument conservation related to natural risks or geotechnics and their influence on monument stability have been analyzed.

6th Symposium
Influence of the environment and defense of the territory on recovery of cultural heritage

Starting from the environment and the defense of territory, on recovery of cultural heritage, the thematic areas have examined, on one hand, the physical and structural aspects of monuments, the analytical methods and the technologies of treatments, on the other, how they have influenced the exchange and sharing of experiences concerning aspects linked to natural hazards, methodologies for the assessment of damage and remediation, planning and heritage management.

7th Symposium
Water and Cultural Heritage

The theme chosen for this session, “Water and Cultural Heritage”, refers to the general problem of the interaction between water and construction materials, with a particular emphasis on monuments which are permanently in contact with water such as quays, bridges, water mills or chateaux surrounded by moats. A large array of topics will enable scientists to discuss and share among themselves the main problems they encounter in their respective monuments projects in the Mediterranean Basin. Thus, the Symposium is appropriate not just for restorers and conservators of stone artists, architects, restoration engineers and other specialists in the design and restoration of monuments, but also for art historians and other scientists in the fields of physics, chemistry, biology and mineralogy.

8th Symposium
Monument Damage Hazards & Rehabilitation Technologies

The theme chosen for this Session, “Monument Damage Hazards & Rehabilitation Technologies”, refers to the debate and problems of monuments, as well as to the technologies used for damage rehabilitation. A large array of topics will enable scientists to discuss and share the main problems they encounter in the rehabilitation of monuments in the Mediterranean Basin. The Symposium is addressed to restoration engineers, architects, physicists, restorers and conservators of stone artists, architects, restoration engineers and other specialists in the design and restoration of monuments, but also for art historians and other scientists in the fields of physics, chemistry, biology and mineralogy.
For these reason in the Symposium of Patras are highlighted the focal points of the monument damage hazards and those of the rehabilitation technologies, inside of which are placed equally important topics from the construction history to the restoration history; from the materials and their properties to the factors and the processes which determine the state of deterioration, its evolution and the rating of damage; and, finally, from the formulation of models, calculation, test-application of prevention measures to the monitoring and maintenance. Of course, monument and archaeological sites demand also in planning the development of the extraordinary ecosystem heritage-environment of the rich and complex patrimony of the Mediterranean belt.

According this perspective, the choices of most fair technologies in conservation and rehabilitation arise from intervention criteria derived both from the interpretation of the external aggressions provoked by natural and anthropogenic factors on building materials and from the failures caused by the instability of the foundation terrains or by the occurrence of sudden and long term events linked to natural risks.
Materials and weathering processes request a particular attention addressed above all to clarify: i) environmental goals, defined by different parameters that are variable in time, and the “variability” role, as factor which can determine the intensity of the stone decay; ii) physical and mechanical indexes and parameters of the building materials, which influence the deterioration of the material themselves; iii) the source and the dispersion of natural pollutant such as the marine aerosol, which can provokes severe damage in coastal areas; iii) analytical techniques to characterize the weathered surface layers. For the technologies for the conservative intervention two relevant topics, as geometry and morphology of the masonries, are considered, including the characterization of the materials, mortar, stone and brick. In this field, the non destructive techniques, in particular, like the digital weathering analysis and the ultrasonic investigations, have always represented in our meetings the validity of the information in order to measure the parameters which have an influence on global behaviour of the wall structures. The examination of the risk conditions to which many monuments are exposed has represented also a treated argument in which careful controls and monitoring systems have each time proposed to allow the attainment of realistic previsions on the risk. Regarding the preservation, maintenance and management aspects, a great attention has been reserved to the chemical products as well as to the results of the research to evaluate the extraction of the entrapped salts which could be removed before any operation. In this field the objective how to achieve the validity of methods and parameters employed in the control of treatments, as well as the aesthetic and functional necessities of the employed products, is always present. In particular, as regards this topic, another recommendation comes out from the symposium of Orleans which has suggested establishing much closer the relation between theory and practice. Considering, for example, both the analysis of the building materials and structures and the procedures in conservation, ineffective or inappropriate choices of intervention are often applied without any knowledge of the mechanisms of the decay processes. For the selection of treatment products, the consideration on possibilities and risks as well as in salt loaded substrates must take into account the nature and the characterization of the substrates; also the adaptation of the structures to the site conditions cannot be underestimated within the rehabilitation of the ancient buildings intervention.
The rehabilitation, indeed, requests specific contributions in knowledge starting from the consideration that the Mediterranean countries are exposed to earthquakes, landslides, floods and subsidence. The vulnerability of ancient structures in hazardous areas is matters of growing concern. The application of suitable technologies to preserve ancient structures is integral part of the damage reduction policy in these areas while the objective remains to assume the acquaintance elements to define the intervention. A large share on following questions stand up today about the technologies performance for cultural heritage: i) no future damage for the structures to be protected must be derived from the applied technologies; ii) the rehabilitation and protection works performance must continue for the structure lifetime; iii) the intervention must follow non-invasive criteria, designed to allow the availability of architectural structures and to preserve their artistic value.

These arguments represent a challenge for scientific research since the development of intervention technologies requires methodological approaches to increase knowledge in protecting cultural heritage in relation to the natural risks induced effects. From this consideration fundamental topics of the research arise; they are identified by the: i) check of limits and efficiency of the products and utilized techniques; ii) proposals of new solutions through experimentation and modelling. The products and the technologies could be calibrated to specific risk thresholds. A further recommendation, about the latter topic, has arisen from the last symposium of Orleans: the models to be accepted must be more adherent to the real situations. To aim at a comprehensive view before going into details, when an overall conception is not to disposal and the processes are not fully understood, it is necessary to eliminate trying and giving incomplete models.

The deep infringements of monuments cannot be compared to those of usual buildings, which can be renewed according the temporal rhythms. Wars, tourism and natural hazards have struck the patrimony which is heartened once again with unlike results. The most burning critic labels these cases as an “eternal punishment of the monuments”. I remember an article, recently appeared in an art magazine and presented though a preliminary statement, which emphasizes that the monument are often sentenced to survive under the strokes of the
restoration like a star of the cinema obliged to suffer the umpteenth operation of aesthetic surgery. Some reconstructions should be pushed, moreover, to modify or to deteriorate the original one to go so far as the result unrecognized to the eyes of their creators.

For that reason the International Group must continue to produce knowledge.

The international cooperation needs the formation of National Groups of the Mediterranean Monument Conservation in reference to the following objectives: i) how to operate to improve the results of national researches so that they could find resonance in the international symposia; ii) how to promote international exchanges in each country through conferences and meetings; iii) how national members could keep and favour relationship with universities, government institutions, industries, laboratories, industries and firms. Moreover, in each symposium should be take the opportunity to appoint the executive board to help the activities of the national groups and that of the international co-ordinator.

### National Groups
- how to operate to improve the new and original results of the national researches could find resonance in the International Symposia
- how to promote interdisciplinar exchanges in each Country (e.g. national conferences, etc.)
- how national members could keep and favour relationship with Universities, Government Institutions, Industries, Firms etc.

### The National Reference Members
- should be able to formulate concrete proposals how to join activities and objectives of own country with the international ones, to improve the Symposia success
- the Executive Board could help the activities of the International Co-ordinator

I would like to conclude with the underlining that the choice of Patras as venue of the 8th Symposium is not a casual one. The city is an ancient cultural centre of the Mediterranean and its monuments and remains offer examples of a great scientific interest of processes and events which act in the Mediterranean...
area; Patras, with its past civilizations monuments, expresses examples of recovery and maintenance interventions that cannot be linked to purely economic reasons rather than to cultural ends.

Patras and the surrounding archaeological areas admonish the civil community that through the respect towards the historic-architectural documents, remained undefended and abandoned to decay and neglected, will be able to draw together the culture of all countries; Patras, therefore, is the ideal venue which encourage us to develop the dissemination in conservation for further knowledge.