

Initiatives of ICOMOS to Improve the Protection and Conservation of Heritage Sites Facing Natural Disasters and Climate Change

The organisation of this symposium by ICOMOS Germany with the help of the Faculty of Architecture at the Technical University of Dresden in the context of a vast international event like *Denkmal 2006* is a noteworthy initiative. It provides a valuable opportunity to address the pressing subject of natural disasters and cultural heritage by bringing together a diversity of conservation, restoration and heritage management professionals as well as academics and enterprises. Indeed, one of the great needs in our field is the development and better use of a diversity of skills, knowledge, experience, technologies and other resources to accomplish the goals of conservation. Whether they are defined by international conventions like the 1972 World Heritage Convention of UNESCO, national legislation like the ones in most countries or the will of a local community or volunteer organisations, these goals are set to ensure a better future for cultural heritage.

Today's world presents many specific threats to the historic monuments and buildings of all ages, to archaeological sites or to heritage ensembles like cities or landscapes. Many of these threats result from the development models adopted by societies over the last few decades. In Europe and now in Asia, atmospheric pollution dissolved in a few years the stone and painted masterworks that had survived over centuries of iconoclasm and war. Massive infrastructure projects destroyed vast areas of century-old landscapes and thousands of irreplaceable archaeological sites. Urban renewal turned into »urban removal« as thousands of monuments, neighbourhoods, houses or streetscapes were demolished, paving the way for the great homogenization of European, American or Asian cities, erasing their distinctive character. Disappearance of skills and the culture of maintenance lead to the decay and eventual loss of thousands of historic vernacular buildings and structures. Other important damage and losses are caused by looters, vandals, rioters or various militias or warring factions. The ICOMOS Heritage at Risk Reports, published since 2000 with the essential support of ICOMOS Germany and its partners, offer a vast sampling of such man-made disasters. For these, human societies can identify the sources of the destruction within themselves and, hopefully, also the means to bring change through some sustainable development policies, legislation or reconciliation processes.

Yet, a large number of historic monuments or heritage structures, sites or areas are also lost every year to natural

events such as lightning, windstorms, floods, hurricanes, bush fires, landslides or earthquakes. These are not »disasters as such« but as a result of their impacts on human societies and individuals. On 26 December 2004, the international community was shocked by the earthquake and resulting tsunami that caused close to 300 000 casualties across the Indian Ocean, affecting over 40 countries or their population, including a significant number of foreign tourists. In a way, it was the first world-wide natural disaster for its magnitude and reach. Less mediatised are the many smaller earthquakes, fires or meteorological phenomena that cause damage all over and are often recorded by scientists or managers but remain unknown to the general public and the international community.

The global impact of these events on cultural heritage remains largely non-documented and it is not yet possible to provide regular statistics on losses of cultural heritage to natural phenomena, as is possible for the natural heritage thanks to scientific networks and infrastructures developed over recent decades. Facing this, ICOMOS is developing an International Observatory on Monuments and Sites to take better advantage of its professional and institutional networks and strategic partnerships. But, the objectives entrusted to our organisation by its founders and members require that we go beyond the mere documentation of the effects of the problems and have a more proactive approach. Human societies have little capacity in the current state of science to prevent natural events such as a storm or an earthquake, and our responsibility is to limit their possible impact through prevention, preparedness and adequate response.

In many countries, cultural heritage is considered as a non-essential by civil defence or emergency planners and authorities. Thus, the challenge is double: to be adequately acknowledged and then, to be well prepared for disaster and treated in case of emergency. For institutions and professionals in the field of cultural heritage, natural disasters raise three main challenges:

- make prevention a part of standard protection and conservation practice;
- address damage of variable and often paramount large scale and intensity;
- reinforce interdisciplinary and international cooperation before, during and after.

The purpose of this paper is to give some background

on the work and initiatives of ICOMOS on the general subject of natural disasters and cultural heritage and on these three themes in particular. It will also examine current threats, in particular more global ones such as climate change which are of concern to the international community. Finally, it provides some concluding remarks and observations with recommendations for actions that can be initiated at the local, national and international levels.

Natural disasters and the mission of ICOMOS

ICOMOS was founded in 1965 in Krakow (Poland) following a resolution proposed by UNESCO and adopted at the 2nd Congress of Architects and Specialists of Historic Buildings held in Venice in 1964. Article 4 of its statutes identifies its aims as follows: *ICOMOS shall be the international organisation concerned with furthering the conservation, protection, rehabilitation and enhancement of monuments, groups of buildings and sites, on the international level (Statutes of ICOMOS, 1978)*. It is an international network of some 9000 professionals and institutions active in some 150 National and International Committees, including the International Committee on Risk Preparedness (ICORP) whose establishment was authorised in 1997. ICOMOS is governed by a General Assembly which meets every three years and delegates its authority to an elected Executive Committee. Heads of the National and International Committees form an Advisory Committee that meets annually.

ICOMOS promotes international and interdisciplinary cooperation to improve the effectiveness of protection and excellence in practice of conservation of immovable cultural heritage. Through its committees, it develops and disseminates doctrinal texts, charters and other forms of guidelines and reference material applicable to specific heritage types or disciplinary fields. Its role is not to protect directly cultural heritage but rather to help those who have that authority to use it in an appropriate and effective way, as inspired by a collegial and international sharing of experience and knowledge. ICOMOS is also identified in the 1972 World Heritage Convention as an »Advisory Body« to assist the World Heritage Committee in the implementation of the Convention.

The primary doctrinal text of ICOMOS is the 1964 International Charter for the Conservation and Restoration of Monuments and Sites (also known as »*The Venice Charter*«) adopted at the 2nd Congress in Venice and the founding General Assembly of ICOMOS in 1965. It provides guidance on conservation, restoration, maintenance and use of historic buildings, and the excavation and conservation of archaeological sites, referring to the importance of

authenticity, integrity, setting or documentation. It doesn't refer specifically to any form of disaster, including natural forces and their potentially devastating impact. Yet, the lack of such formal reference did not prevent ICOMOS members and committees from developing activities, publications and cooperation to enhance prevention or adapting broad conservation principles to the reality of heritage sites located in risk areas. For example, in 1977, ICOMOS met with UNESCO on conservation practices and issues in seismic areas and, in 1980, held a symposium-cum-training in Antigua Guatemala (Guatemala) on the subject. In 1992 and 1994, ICOMOS Canada intervened with the successive Prime Ministers of Canada and contributed greatly to Canada's ratification of the 1954 Convention for the Protection of Cultural Property in the Event of Armed Conflict (Canada later became the first G8 country to ratify the Convention and its two Protocols). A full catalogue of all these initiatives remains to be made.

In 1992, following the dramatic bombing of the heritage city of Dubrovnik in December 1991 and subsequent experts missions by UNESCO, ICOMOS launched an initiative to bring together various international organisations concerned with cultural heritage facing events of catastrophic impact. This initiative was set up by then Director of the ICOMOS Secretariat, Leo Van Nispen, in cooperation with the Secretary General, Herb Stovel, who invited representatives of UNESCO, ICOM, ICCROM, the Association for Preservation Technology and Patrimoine sans Frontières among others. An Inter-Agency Task Force (IATF) was created and operated with the active support and participation of Dr. Hideo Noguchi of UNESCO's Cultural Heritage Division.

Between 1992 and 1996, the IATF offered a platform of coordination between existing organisations. It prepared a review of UNESCO programmes to assess how they took into consideration risk preparedness for cultural heritage. It examined case studies like the Medina of Tunis and developed risk preparedness guidelines for types of World Heritage sites (buildings, archaeological sites, ensembles/landscapes). It also articulated a five-point structure for future developments at the local, national and international levels: the Risk Preparedness Scheme composed of the following items:

- Documentation of heritage sites and their access, and risks
- Manuals and training for conservation or civil defence (e.g. the Risk Preparedness manual jointly published by ICCROM, UNESCO, ICOMOS and the World Heritage Center in 1998)
- Public awareness campaigns, publications, activities for various groups in society like schoolchildren, chambers of commerce, elders, artisans.
- Emergency Funds to support early response and sta-

bilisation missions, equipment and works as well as research in the field

- Response Teams of volunteer specialists and citizens trained to provide help to specific monuments or sites or ready to be sent on emergency response missions elsewhere.

The International Committee of the Blue Shield

One major output of the work of the IATF was the founding, in 1996, of the International Committee of the Blue Shield (ICBS). Rather than a large new organisation which would compete and contradict existing organisations, the ICBS was created as a partnership agreement to ensure contact and coordination between the major existing world-wide organisations in the field of cultural heritage. Its founders are ICOMOS, ICOM (International Council of Museums), ICA (International Council of Archives) and IFLA (International Federation of Library Associations) and were later joined by CCAAA (Co-ordinating Council of Audiovisual Archives Associations). The involvement of ICA derived from a regional meeting of the South Asia Association for Regional Cooperation organised in June 1995 in Colombo (Sri Lanka) on the theme of risk preparedness for cultural heritage.

ICOMOS is the first and only one of the partner organisations to have its General Assembly adopt the goals of the ICBS, which were originally adopted as follows:

- a. to provide advice for the protection of cultural heritage in the case of identified threats or of emergencies created by natural or human causes, particularly in the case of armed conflicts;
- b. to facilitate international response to threats or emergencies through co-operation between the participating organisations and national organisations;
- c. to act in an advisory capacity in cases arising under the Hague Convention for the Protection of Cultural Property in the Event of Armed Conflict (1954);
- d. to encourage safeguarding and respect for cultural property and particularly to promote higher standards of risk preparedness;
- e. to consult and co-operate with other bodies with appropriate expertise or interest including (but not excluding others): UNESCO; ICCROM; the International Committee of the Red Cross (ICRC);
- f. to facilitate professional action at national and regional level to prevent, control and recover from disasters.

The name of the ICBS derives from the emblem of the Convention for the Protection of Cultural Property in the Event of Armed Conflict (1954), better known in the field

as »*The Hague Convention*.« The Gulf War of 1990 and the tragic collapse of Yugoslavia had brought additional attention to that convention in the international community and among conservation institutions and organisations like ICOMOS, ICOM and ICCROM. A review of the Convention was also initiated under UNESCO in 1991 and led to the adoption of a 2nd Protocol in March 1999. The 2nd Protocol covers such issues as conflicts that are not of an international character, such as the one in former-Yugoslavia, the granting of enhanced protection status, and the establishment of a *Committee for the Protection of Cultural Property in the Event of Armed Conflict* which can cooperate with the ICBS.

The ICBS first met in Paris in July 1996. Among its first acts was to address letters to the Prime Minister of Canada and the Premier of the Province of Québec, expressing concern and offering help in the context of the Saguenay floods which were just occurring in the city of Chicoutimi, affecting historic buildings, museums, archives and landscapes. Many such appeals were to follow, as the ICBS expressed concern at the fate of cultural heritage in areas stricken by various forms of disasters of natural or human origin. The main activity of the ICBS is to coordinate its member organisations through regular meetings of their heads with the Secretariat. It undertook various activities such as a training session in Radenci (Slovenia) in 1998, participated actively in the meetings organised to prepare the text of the 2nd Protocol to the Hague Convention. It cooperates closely with UNESCO, ICCROM and other organisations.

The field action of the ICBS requires the establishment of National Committees which are to reproduce, at the national level, the formula of the agreement of the ICBS with corresponding national committees or organisations of the five member international organisations. In 2004 and 2006, ICBS assembled existing National Committees in Torino (Italy) and The Hague (Netherlands) to recall the founding principles and reinforce them as common to the whole organisation so as to improve cooperation and consistency. A Future Plan of ICBS, adopted by the partner organisations in 2006, shares work and responsibility as follows:

The International Committee of the Blue Shield

- Deals with accreditation or de-accreditation of National Committees
- Works on the Hague Convention to promote its ratification, takes part in 2nd Protocol Committee meetings and maintains contact with other advisory bodies (ICCROM, ICRC)
- Provides advice to International Courts and other international organisations.

The National Committees of the Blue Shield

- Develop projects, activities and networks in relation to National groups of the International members organisations and relevant to National priorities
- Promote ratification of Hague Convention.

The Association of the National Committees of the Blue Shield

- Works on communications, archives and website
- Prepares information, technical and training material for the Committees
- Promotes awareness and preparedness to decision-makers and funding organisations and develops training activities (e. g. for peacekeepers)
- Cooperates with ICBS on database of specialists for UNESCO.

Overall, the ICBS initiative raises a lot of interest among organisations and professionals. Yet, even after these years, it remains in the early days and is slowly developing a framework that will allow for it to carry more preventive than reactive action. One of the great benefits of the existence of the ICBS has been to allow professionals from the various branches of the cultural heritage system to meet at the national and international levels to develop a sense of common goals. It also gives a platform for the conservation community to develop very important relations with such non-heritage organisations as civil defence, the military and emergency response authorities. Its great challenge remains to remember its founding goals and the very concept of a true partnership rather than create a separate organisation which will compete with its member organisations and reduce their commitment towards heritage before, during and after disasters.

Learning from local experiences

Like the development of trauma medicine with accidents, law with jurisprudence or civil engineering with structural collapses, conservation should »benefit« from disasters to enhance its knowledge of their impacts on cultural heritage and improve methods of prevention. In a way, this is happening as conservators learn from disasters they and their organisations live through. Also, the increase in the number of professional meetings and symposiums which give those colleagues the opportunity to share their experience is an encouraging indicator of a growing awareness amongst institutions, practitioners and decision-makers.

For the moment, this remains an activity that relies on the initiatives of organisations like universities, National

Committees of ICOMOS or individual institutions. One could hope for a slightly more systematic approach to recording and disseminating such valuable empirical knowledge. In a way, this is one of the main purposes behind ICOMOS's establishment of its International Committee on Risk Preparedness (ICORP) or its publication of the regular *Heritage @ Risk Report* by collecting reports from its whole membership.¹ But this has yet to shift attitude and build resources and momentum to move from anecdotic to systematic documentation of disasters in the field of conservation. The organisation is currently working on developing an ICOMOS International Observatory which could enhance its capacity to capitalise on experiences of individual disasters, whether they are sudden like an earthquake, a fire or a storm followed by floods, or spread over years like what is seen with climate change or the transformation of the urban fabric. This will require developing a common and unified format for collecting information so that it can help other institutions and colleagues to access and apply the lessons from other disasters. Even adopting a common standard for documenting the degrees of damage for issuing statistics would be an improvement.

There are some interesting examples of how some natural disasters have led to a conscious effort to improve applicable knowledge, not only in terms of recovery but also in terms of drawing lessons, so as to improve preparedness and preventive conservation. Interesting cases are the Great Hanshin-Awaji earthquake that struck Kobe on 17 January 1995, claiming over 6400 lives and causing great disruptions to the city and the global economy, and the ice storm which covered eastern Ontario and southern Quebec in Canada and parts of New England in the USA in January 1998, causing only a few casualties overall but putting millions of people in chaotic situations in the cold of winter. In both cases, conscious and organised efforts were made to draw lessons from the events and capitalise them into preventive actions.

In the case of the 1995 Kobe earthquake, Japanese authorities organised an international symposium held in Kobe and Tokyo on 19–25 January 1997. This acted as a major debriefing session on the impact of the natural disaster on the historic monuments, archaeological sites and museums of Kobe and the surrounding areas. It also opened a structured and multidisciplinary discussion on risk preparedness for cultural properties, resulting in the adoption of a series of guidelines on risk preparedness for buildings, archaeological sites, historic cities and landscapes but also museums and archives. This review was carried by the academic and conservation institutions. Civil defence and emergency planning organisations are highly sophisticated in Japan but were partly involved in this exercise. The examination of the sequence of events

¹ See www.icomos.org

in the immediate aftermath of the earthquake showed potential for improving the relation between the disaster management agencies and the conservation authorities to prevent further losses of heritage, not so much for individually labelled monuments as for neighbourhoods or ensembles of traditional architecture which confer so much character to modern cities but are so easily (and falsely) demonised as sources of casualties.

With the 1998 ice storm in eastern North America, the nature, the context and the territorial extent and lasting impacts of the natural disaster were quite different. Unusual weather patterns set in the St. Lawrence Valley caused repeated episodes of freezing rain from 5–9 January that built up to 10 cm of ice on a vast area spanning over hundreds of kilometres, from west of Ottawa to Maine. Combined with winds, the exceptional ice loads (up to 18 kg/m on power lines) caused hundreds of electric pylons to collapse and a major disruption of the power grid at Montreal, which almost had to be evacuated, and in the surrounding rural areas of Montérégie, leaving over 1 million people without electricity in January and forcing the largest peacetime mobilisation of armed forces in the history of Canada. The crisis was highly visible as Montreal is one of the main cities in Canada and, with Ottawa, a place with a concentration of media. Heritage was affected in different and unexpected ways as it suffered first the weight of the ice, the falling of trees, the power cuts which lasted up to 6 weeks in some areas, and, finally, the water and humidity damage resulting from thawing ice or broken pipes.

In Montreal, thousands of trees lining neighbourhood streets and shaping designed landscapes like Frederick Law Olmsted's Mount Royal Park, arboretums and cemeteries were severely wounded or lost. Churches suffered damage when heavy slabs of ice fell from their spires through their roofs or when their heating systems stopped. Many traditional homes had severe roof damage. Some museums and archives were affected. And, as the police had closed downtown and Old Montreal for security reasons (ice sheets were falling from buildings), staff from the Ministry of Culture were forbidden access to their offices and thus could not coordinate in carrying on their conservation duties, something which would have led to major losses had the disaster been more destructive (e.g. fire or earthquake). In such circumstances, a lot of the heritage advice and monitoring was done by volunteer associations like Hérédité Montréal.

Such ice storms are not uncommon in that part of the world and were even reported by the Jesuit missionaries in their 17th c. diaries. Yet, the duration of the phenomenon—five days of freezing rain, possibly attributable to global change in climate patterns—had disastrous impacts. The scale of disruption brought the Government of Quebec to create a special public enquiry Commission whose report—*Pour affronter l'imprévisible*—and

its recommendations make reference to cultural heritage (landscape, trees, historic buildings) as part of the storm's social impacts. It also notes the value of initiatives taken by heritage and community organisations like Hérédité Montréal which organised emergency heritage conservation clinics in most affected neighbourhoods with volunteer architects, engineers, roofers and trees specialists, or Les Amis de la montagne's successful fund-raising campaign to restore Mount Royal Park by planting trees or supporting scientific research on the natural recovery process (see www.lemontroyal.qc.ca). An interesting note can be taken of the spontaneous and generous interest of the public for iconic public parks damaged by storms (e.g. at Versailles after the 26 December 1999 windstorm and in Vancouver when Stanley Park and its giant trees were severely affected by storms on 15 December 2006.)

The usefulness of a National Summit on heritage and emergency

In conservation, one can observe that there are three levels of intervention. The international level includes *inspiration* provided by sharing common goals like those set forth by the ICOMOS Charters and Documents or the World Heritage Convention, in particular in its preamble, and also *solidarity* and *cooperation*. The national level focuses on *organisation*, with goals being carried out through and under the protective powers of a State, centralised or federal, and its legislation, policies and institutions as mentioned in Article 5 of the World Heritage Convention and with the benefit of civil society—e.g. ICOMOS Committees and other volunteer organisations generating reference documents such as national charters or guidelines, academia and, increasingly, the private sector. At the local level is *action*, since monuments, sites, cities or landscapes are by definition or principle immovable and need to be cared for, protected and conserved where they stand.

The reaction of the heritage groups in this 1998 ice storm in Montreal (local) benefited from ICOMOS initiatives like the IATF (international) and the spirit of cooperation generated at the Quebec Summit on Heritage and Risk Preparedness in Canada (national). The Summit was organised in September 1996 by ICOMOS and ICOMOS Canada in cooperation with UNESCO and museums and archives associations in Canada. It brought together experienced colleagues from Canada, USA, Japan, the Netherlands, Switzerland, Macedonia and representatives from UNESCO and civil defence authorities in Canada, Quebec and Montreal. Participants also had a possibility to examine on site the damage caused to the city of Chicoutimi, its historic core (Quartier du Bassin) and the old paper mill (La Pulperie) by the torrential floods of the Saguenay River in July 1996.

The Summit focused on connecting conservation and emergency agencies rather than on technical solutions for structural upgrading or fire prevention in historic buildings. It adopted a Quebec Declaration (see Appendix A following this article) that identifies six key principles:

- Challenges: vulnerability; lack of preparedness
- Opportunities: public interest; leadership; experience
- Awareness: identify heritage; media; local
- Collaboration: in heritage field; with fire department and civil defence
- Local Capacity: roles; personnel; manuals
- Enabling Framework: legal obligations; early warning

Although these may sound too general and impractical to some colleagues, these words were rather innovative for Canada and helped build new and more effective approaches. On that basis and simple common language, new cooperation links were established between the heritage and civil defence systems, mainly in Montreal where it spurred a host of follow up activities and the further inclusion of cultural heritage and its protection as part of the overall development and management policies for the city.

The concept of such a National Summit was not invented in Canada. On 1 December 1994 in Washington, DC, the US Federal Emergency Management Agency (FEMA), the Getty Conservation Institute and the National Institute for the Conservation of Cultural Property had hosted a National Summit on Emergency Response at the American Institute of Architects, with the participation of the Directors of FEMA and the National Park Service. This led to the creation of a National Task Force on Emergency Response that includes US/ICOMOS and continues its activity to »promote preparedness and mitigation and provide expert information on response and salvage to institutions and the public.«²

Considering the natural inertia in complex and segmented administrative systems, the success of events like these National Summits relies on momentum given by some leaders or circumstances. Sadly, tragic heritage losses that could have been avoided often act as this trigger for improvement. Another opportunity is given by the World Heritage Convention, now signed by over 180 countries. Although a lot of attention is given to the care of the sites inscribed on the World Heritage List, the Convention is fundamentally a tool to enhance the quality of conservation and presentation of the whole cultural and natural heritage of a country. Its Article 5 engages governments to adopt policies »to give the cultural and natural heritage a function in the life of the community and to integrate the

protection of that heritage into comprehensive planning programmes.« On such a basis, a lot can be accomplished to include acknowledgement and adequate consideration of the cultural heritage in emergency response and preparedness plans, often developed and carried out without due consideration for heritage and the institutions in charge of its care and protection. Appendix B (following this article) offers a series of notes on how Article 5 could serve as a basis to argue in favour of conservation activities and preventive measures related to natural disasters or the impact of climate change.

Climate change: a »natural« disaster of global scale

The relationship between human activities and the climate or seasons is the source of a lot of heritage structures, landscapes or even the way many human settlements or buildings are laid out, shaped and maintained or the way they relate to each other. Agriculture, hunting or fisheries and their heritage of sites, buildings, landscapes or even specific rituals are examples of this. So are the trade winds and the maritime routes they allowed. Architecture illustrates the ingenuity of various people to adapt to the weather, whether it's with the igloos in the north or the wind towers that provide natural cooling in ancient Iranian cities. It offers another illustration of the generic phrase »*the combined work of man and nature*« mainly used to describe adaptation to land. It could be the theme of a specific documentation exercise to catalogue the cultural heritage structures, sites and areas that illustrate the traditional knowledge or other inventions developed by humans to deal with the climate. Such documentation would be useful to further understand and anticipate the impacts of changing climate on cultural heritage—tangible and intangible—at the local, national or international level since it would give a clearer identification of the link between the two.

From a conservation perspective, the main question would be to understand the impact of climate change on the physical attributes and features as well as the significance, value and meaningful use of that heritage. Constantly, monuments, sites, ensembles and other forms of heritage places are exposed to threats falling under six broad categories:

- natural decay;
- natural disasters;
- human violence;
- inappropriate use or development;
- demeaning transformations or demolition;
- obsolescence and oblivion.

² See <http://www.heritagepreservation.org/PROGRAMS/taskfer.htm>

Of those, climate change currently observed by the scientific community world-wide would affect or enhance directly three: natural decay; natural disasters and inappropriate use or development. One could also argue that climate change could generate abandonment or force inappropriate interventions that would destroy heritage or reduce greatly its significance or authenticity. Also, increased concerns are expressed by governments like the United Kingdom that identify climate change as a national security issue that could trigger major tensions between nations, peoples and societies and, consequently, violence and conflicts.

The documentation of possible impacts in particular to designed appropriate adaptation and other preventive measures relates to the type of immovable cultural heritage and their related objects, archives or even intangible aspects or associated rites or traditions. For individual historic buildings or structures, impacts might relate to changing patterns of decay for their material and constructive systems, to infestation by insects or new types of biological agents benefiting from new temperatures, or to increased structural stress caused by wind, sea waves or thawing permafrost. For archaeological sites, it could come from changes in ground humidity and chemistry, from soil erosion or from increased root systems from plants. For heritage areas or »cultural ecosystems« like vernacular settlements, historic cities or landscapes, climate change would likely affect the livelihood and thus not only the heritage-defining features but also the heritage-defining human activities such as agriculture, fisheries, forest harvesting, seasonal activities and migrations, rituals, and also the land patterns, roads and links, transhumance or tourism, even the general economy of basic maintenance of the traditional built environment. The 2005 report on Climate Change and the Historic Environment prepared by Professor May Cassar of University College of London makes a substantial contribution to structuring the documentation effort for buildings, archaeology, parks and gardens.³

Climate change and World Heritage

Despite valuable work like that of Professor Cassar at the UCL Center for Sustainable Heritage, the field remains relatively largely unexplored. Possible explanations of that situation may be found in the general focus of conservation professionals on the needs of restoration and its theory rather than preventive action, as ICOMOS Director Leo Van Nispen observed in proposing the formation of ICORP in 1987. Also, there is definitely a more mediatised

focus on natural heritage and the guilt of human societies and their economy. Another possible explanation may be found in the reality of conservation as it operates mostly on traditional, professional and empirical knowledge rather than the scientific knowledge generated by modern climatology and other disciplines.

Once again, the World Heritage Convention provides opportunity and a fertile context to engage the discussion on cultural heritage and climate change as demonstrated in the 2007 publication of Case Studies on Climate Change and World Heritage by UNESCO's World Heritage Center, which offers a panoramic sampling of issues relating to glaciers, marine and terrestrial biodiversity, archaeological sites and historic towns and settlements.⁴ Another illustration of this opportunity is the integration of a specific climate change impact component in the risk assessment which is done by States Parties and by ICOMOS as part of the nomination dossier and the evaluation of cultural properties submitted for inscription on the World Heritage List.

The discussions and decisions of the World Heritage Committee offer another expression of that growing concern. In 2005, at its 29th Session in Durban (South Africa), the Committee called for the preparation of a strategy to address climate change and improve the adaptation of World Heritage Sites. Consequently, the Center organised an experts meeting at UNESCO in March 2006 with the support of the United Kingdom. The Committee further examined and decided on the issue at its 30th and 31st Sessions in Vilnius (Lithuania) and Christchurch (New Zealand), adopting a strategy of preventive and corrective actions of local adaptation as well as regional strategies, and sharing knowledge rooted in the following considerations:

- climate change is one among many factors impacting the conservation of World Heritage sites;
- the World Heritage Convention needs to be better linked to other conventions relative to climate change; e. g. through reporting mechanisms, integrated strategies and institutional networks;
- research should be pursued on the physical, cultural and social impacts of climate change on World Heritage.

ICOMOS actions on climate change

As an independent, non-governmental international organisation as well as an Advisory Body to the World Heritage Committee, ICOMOS has committed to action on climate change. Our International Committee on Polar

3 See http://eprints.ucl.ac.uk/archive/00002082/01/Published_Climate_Change_Report_05.pdf

4 See http://whc.unesco.org/documents/publi_climatechange.pdf

Heritage identified specific cases of threats and damage to heritage sites in the ICOMOS Heritage @ Risk Report 2004/2005 (e. g. Herschel Island in the Yukon Territories, Canada). Our Advisory Committee raised the issue at its meeting in Bergen (Norway) in 2004. Resolution 37 adopted by the 15th Session of the General Assembly held in Xi'an (China) in 2005, engages ICOMOS to

- *communicate to the organisers of and participants to the Montreal Conference on Climatic Change [i. e. the 11th Session of the Parties to the UN Framework Convention on Climate Change and first meeting of the Parties to the Kyoto Protocol] the strong concern of ICOMOS for the impact of climatic changes on tangible and intangible cultural heritage in its full diversity of types, cultural and historical origins and the need to ensure it is specifically included in the items discussed at the Conference, in its conclusions and its following actions;*
- *express its will to fully cooperate through its National and International Committees (including ICORP) with UNESCO and other relevant organisations to document the impact of climatic change on cultural heritage and develop preventive measures.*

ICOMOS is interested in engaging its members, committees and partners to ensure that monuments, historic buildings or settlements, archaeological sites and heritage landscapes are duly taken into consideration in the context of the paramount global discussions and negotiations. We also look forward to developing tools so that climate changes are adequately understood and integrated in conservation practices, projects and policies.

ICOMOS's objective is not to challenge the various theories developed by scientific or political organisations to explain the origin of the situation. ICOMOS works locally, regionally, nationally and internationally to achieve the fundamental goals of conservation so that current and future generations can benefit from their heritage as a prime expression of global cultural diversity and an irreplaceable testimony to the great human endeavour. This work is organised in a special work programme of the organisation, in particular of its Scientific Council which constitutes an internal forum for the International (thematic) Committees of ICOMOS.

Currently, ICOMOS has engaged in a mobilisation of its network to collect illustrations and compare observations of the impacts of climate change on cultural heritage sites. The 2007/2008 Heritage at Risk report includes a special chapter on the subject and a series of events are organised to connect with the base of our membership and committees. National Committees included sessions on the subject as part of their regular meetings (e. g. ICOMOS Germany session in Leipzig, Australian ICOMOS annual conference in Cairns, ICOMOS Canada annual meeting). Workshops

and lectures have been organised (e. g. in Ushuaia, Argentina) to stimulate local monitoring and knowledge to be assembled and shared. On 8 October 2007, the ICOMOS Scientific Council organised a special symposium on the subject in Pretoria (South Africa) where cases from various geographical contexts or heritage types were compared. In addition, ICOMOS coordinates and cooperates with major partners like the World Monuments Fund which dedicated part of its 2007 World Monuments Watch to the subject and held a special workshop on it in St. Paul, Minnesota, at the George Wright Society conference.

A major initiative on the subject was taken when the ICOMOS International Committee on Risk Preparedness, with the support of Dr Rohit Jigyasu, organised a first ICOMOS International Conference on the subject in New Delhi in cooperation with the National Institute for Disaster Management of India, ICOMOS India and the regional office of UNESCO. The concluding resolution (see the appendix of this publication) provides guiding principles for a multidisciplinary approach to research, document, and assess risks to cultural heritage due to climate change (e. g. glacial melts and potential floods, sea level rises, desertification, extreme meteorological events, saline water ingress or infestation). It suggests such assessments be done both at the macro/regional/thematic level and micro/local/site level to provide an overview that supports mid/long-term monitoring as well as applicable knowledge to protect the heritage itself. Participants also noted the frequent disconnection between heritage and disaster management, and recommended that this be resolved through institutional processes, protocols and policies for disaster reduction, and that adequate resources to ensure intents turn into actions.

In preparation for the 16th General Assembly in Québec (Canada) in September 2008, ICOMOS is planning further meetings. In particular, an ICOMOS experts meeting will take place in Montreal (Canada) in May 2008 to develop a methodology and related protocols for the correlation of traditional and professional knowledge and site management records with scientific data. This will not only help close the knowledge gap in terms of observing the impact of climate change on cultural heritage over the past decade but also set up a monitoring system linking a series of reference heritage sites to collect comparable data through regular maintenance and management or conservation works. Case studies are being developed in preparation for the meeting according to various heritage types: historic monuments and buildings; archaeological sites; parks and gardens; complexes; urban ensembles; heritage landscapes, and monuments of nature.

As the host of this meeting, Montreal will develop a case study on the impact of climate change on the heritage of its metropolitan core. Vulnerability factors, legal obligations, institutional cooperation and community awareness will be examined. The presence of a diverse architectural,

archaeological, landscape and natural heritage benefiting from over a century of public debate, conservation effort, and scientific and institutional development will provide opportunity for the development of the ICOMOS protocol on climate change impact documentation and adaptation. The recent signing of an agreement between the National Geographic Society, Héritage Montréal, Tourism Montréal, the UN World Tourism Organisation's Center of Excellence of Destination and the City of Montreal making Montreal the first urban destination acknowledged as part of the Society's Sustainable Tourism programme, also supports this ICOMOS initiative.

Some closing remarks

In the process of developing the 1997 Kobe-Tokyo international conference on risk preparedness, we imagined with Dr. Hideo Noguchi and Leo Van Nispen the concept of *bosaido* or the »way of preparedness,« using Japan as an inspiring source of the word itself. Now that spirit is shared more than ever as our societies are more sensitive to their heritage, even if they often keep on with development models that generate more threats and increase vulnerability.

Our times are very challenging with complexity of new dimensions. Health is another pressing issue facing humans all over the world. It offers a useful analogy to those of us in cultural heritage. It has to engage individual people themselves by enhancing awareness and basic

knowledge so they can do more themselves. There are needs for regular check-ups and making the right choices in terms of way of life, for emergency or specialised care, for monitoring the spread of disease and long-term research to improve the scientific basis of medicine and improve the praxis of clinical or community medicine.

Through the work of world-wide organisations like ICOMOS, ICCROM or UNESCO, often operating in close and collegial partnerships, or regional organisations like those in place among countries in Europe, Asia or the Caribbean, solidarity has grown and knowledge has been developed. National models like Japan are better known and connected internationally through efforts of institutions such as the Ritsumeikan University in Kyoto or the Nara National Research Institute on Cultural Heritage which are engaging in mid-term cooperation, research and training programmes on cultural heritage and risk preparedness. The United Kingdom is leading the way on the pressing theme of climate change with efforts in documenting the issue, disseminating knowledge and improving the capacity of conservation institutions, in the complexity of their mandates and organisations, to carry on their mission facing these new challenges. Cities and metropolises are more sensitive to heritage as a distinctive asset.

This should reinforce our resolve that prevention is not synonymous with procrastination nor an excuse not to carry on, immediately, conservation work. This should reinforce and renew our commitment to protect and conserve heritage sites as the prime expressions of the human endeavour.

Appendix A: Québec Declaration on Heritage and Risk Preparedness

Summit on Heritage and Risk Preparedness in Canada
Québec City (Canada), 16–17 September 1996

The Québec Declaration on Heritage and Risk Preparedness

Given the following Challenges

The ever present and increasing vulnerability of Canadian and world heritage in the face of disasters and other events threatening the continuing life of that heritage;

The generally poor state of preparedness for the protection of Canadian cultural heritage in times of emergency;

The administrative obstacles limiting effective coordination among authorities responsible both for cultural heritage and for emergency response at federal, provincial and municipal levels.

Opportunities

Existing emergency response infrastructure and mechanisms in Canada capable of integrating concern for cultural heritage, and the evident interest shown by officials responsible for emergency response to respond to concern for increasing care and attention given to cultural heritage;

The leadership of some Canadian institutions (e.g. National Archives of Canada) in developing preparedness models of value and interest for other groups and institutions;

The focus offered by the existing international Blue Shield initiative for improving the situation in Canada, given:

- The key role played by Canadians in the international movement (that is in the Inter-Agency Task Force Round Tables on the subject initiated by ICOMOS in 1992, and held regularly in Paris since then);
- The interest of UNESCO and ICOMOS in developing a “Canadian model” of risk preparedness;
- The potential offered by the creation of the International Committee of the Blue Shield whose first act was to respond to the Saguenay floods.

Therefore, we the participants of the First National Summit on Heritage and Risk Preparedness in Canada held at the Musée de la Civilisation in Québec, on September 16-17, 1996 , agree to pursue objectives in the following areas:

Awareness

Increase appreciation of the nature and value of cultural heritage among those responsible for heritage and emergency response, and increase knowledge and understanding of potential risks and associated impacts of disasters of natural, technological and social origin threatening the heritage.

Increase mutual awareness of emergency response management concerns and cultural heritage management concerns:

- Affirm importance of cultural heritage for those threatened by loss;
- Recognize strong link between effective heritage protection and clear identification of heritage values in the built environment;
- Better continuing appreciation of the concerns of the public, the youth and the media;
- Improve understanding of local authorities of concerns for cultural heritage protection.

Collaboration

Establish permanent structural links among all those involved with cultural heritage conservation (archives, libraries, museums, built environment) and with emergency response authorities (civil security [and protection], emergency response, public security, defence):

- Identification of potential partners (governments, institutions, corporations and individuals) and their interests;
- Developing network(s) for exchange among those concerned with these issues at local, national and international levels;
- Ensuring effective communication among network members (e.g. electronic mail, newslists);
- Providing occasional forums for exchange among network members, including follow-up to this Summit meeting;
- Developing Task Force/Working group to guide collaboration following the summit.

Building local capacity

Clarify roles and responsibilities of local authorities in heritage protection (decision-making structures in times of emergency; policies for territorial environmental planning and management).

Improve capacity of local authorities, services and local institutions to improve care for cultural heritage threatened by disasters.

- Integrate concern for cultural heritage in existing structures for risk management and emergency response (for example, in methods of risk assessment, intervention planning and implementation);
- Improved knowledge of appropriate “models” in other contexts;
- Improved training for responsible officials and managers;
- Increased opportunities for volunteer participation.

Strengthening enabling framework for heritage protection

At local, regional, provincial, national and international levels:

- Develop and install early warning detection and surveillance systems;
- Improved databases of experiences and success models for consultation and improve accessibility to databases;
- Ensure commitment of authorities concerned to mobilization of appropriate professional experience in times of disaster;
- Develop emergency response mobilization plans.

In Québec, on September 17, 1996.

Note: Canada is governed on a confederation model with three levels of authority in a back up scheme, the local calling upon the provincial which, in turn, can call on the federal resources in case of emergency. This Declaration gives a canvas of principles and key principles to assess, at the national level, the connection between organised preparedness, prevention and response to natural disasters, and the cultural heritage. It can be used as a reference but needs to be adapted to other national contexts, ideally through a multidisciplinary exercise like the National Summit that generated it.

In terms of impact, the Summit gave birth to initiatives in Ottawa and Montreal and the Declaration was promoted at various heritage and civil security conference and meetings since 1996. In Ottawa, the main heritage institutions – National Archives, National Library, National Museum, Parks Canada, National Capital Commission, etc. – established a cooperating agreement for mutual support in case of emergency and cooperated with the municipal emergency response departments.

In Montreal, annual meetings of owners of heritage buildings (e.g. religious properties), heritage institutions and volunteer organisations and civil security organisations raised awareness of the issues and provided opportunities for mayors and other decision-makers to take public stands on heritage matters. In one of the Montréal meetings, the director of the Metropolitan Centre de Sécurité civile and chair of the Canadian Safeguard Network, Jean-Bernard Guindon, declared that this exercise had convinced him and his institution that cultural heritage and historic buildings needed to be treated in a higher priority in times of emergency, second only to saving human lives, since they are human creations and elements of strong community and identity value. Another initiative in Montreal was taken by Nathalie Martin, urban planner and Université de Montréal Masters in Conservation student, who developed manuals and maps informing fire stations personnel of the heritage in the neighbourhoods under their responsibility.

Appendix B: World Heritage Convention – Article 5 (UNESCO, 1972)

Article 5: To ensure that effective and active measures are taken for the protection, conservation and presentation of the cultural and natural heritage situated on its territory, each State to this Convention shall endeavour, in so far as possible, and as appropriate for each country:

- a. to adopt a general policy which aims to give the cultural and natural heritage a function in the life of the community and to integrate the protection of that heritage into comprehensive planning programmes;
- b. to set up within its territories, where such services do not exist, one or more services for the protection, conservation and presentation of the cultural and natural heritage with an appropriate staff and possessing the means to discharge their function;
- c. to develop the scientific and technical studies and research and to work out such operational methods as will make the State capable of counteracting the dangers that threaten its cultural and natural heritage;
- d. to take the appropriate legal, scientific, technical, administrative and financial measures necessary for the identification, protection, conservation, presentation and rehabilitation of this heritage; and
- e. to foster the establishment or development of national or regional centres for training in the protection, conservation and presentation of the cultural and natural heritage and to encourage scientific research in this field.

Note: Article 5 of the World Heritage Convention offers opportunities to address, in a broader way, the issues of natural disasters and climate change in relation to the protection and conservation of cultural heritage. These opportunities are to be found in exploring the potential of each of the article's five paragraphs, taking into account that the article covers more than the exclusive selection of sites inscribed on the World Heritage List but encourages States Parties to improve their performance as the sovereign authority responsible for the protection of a country's historic buildings or cities, archaeological sites, or heritage landscapes in their full diversity. For example:

- *Paragraph a. refers to “general policies” and “comprehensive planning programmes” which can be invoked to effectively integrate cultural heritage into disaster reduction plans at the local, regional, national or international levels. It can help ensure that representatives from heritage departments or institutions in charge of conservation are included in the committees responsible for the implementation and ongoing improvement of these plans. It could also help improve planning so that it reduces risks to cultural heritage from human activities.*
- *Paragraph b. refers to institutional structure and responsibilities and mentions specifically the need for “appropriate staff” and means to carry out their work, which nowadays needs to include disaster reduction and climate change adaptation.*
- *Paragraph c. is essentially focused on reducing or preventing threats and should support risk mapping, monitoring of climate change impacts on cultural heritage sites or research in a sustained way.*
- *Paragraph d. encourages development of tools and operational measures which could include preventive conservation or retrofitting of heritage sites or their adaptation in the context of expected climate change impacts.*
- *Paragraph e. supports the development or strengthening of relations and cooperation between the public sector, academia, scientific research organisations, and the keepers, owners and users of heritage sites at the national but also the regional or local/municipal levels, thus echoing the structure generally in place for civil defence or heritage management.*