International Charters and Recommendations

Internationale Resolutionen und Empfehlungen

Council of Europe, Committee of Ministers, Recommendation No. R (93) 9 of the Committee of Ministers to Member States on the Protection of the Architectural Heritage against Natural Disasters, adopted by the Committee of Ministers on 23 November 1993 at the 503rd meeting of the Ministers' Deputies.

The Radenci Declaration, Blue Shield Seminar on the Protection of Cultural Heritage in Emergencies and Exceptional Situations, Radenci, Slovenia, 12–16 November 1998, www.ifla.org/VI/4/admin/emergcy.htm (14 January 2008).

Kyoto Declaration 2005 on Protection of Cultural Properties, Historic Areas and their Settings from Loss in Disasters (adopted at the Kyoto International Symposium 2005 «Towards the Protection of Cultural Properties and Historic Urban Areas from Disaster« held at the Kyoto Kaikan on 16 January 2005), www.international.icomos.org/xian2005/kyoto-declaration.pdf (14 January 2008).

United Nations Educational, Scientific and Cultural Organization, Convention concerning the Protection of the World Cultural and Natural Heritage, World Heritage Committee, Thirtieth Session, Vilnius, Lithuania, 8–16 July 2006, Paris 2006, whc.unesco.org/download.cfm?id_document=6525

Declaration on the Impact of Climate Change on Cultural Heritage, International Workshop on Impact of Climate Change on Cultural Heritage, New Delhi (India), 22 May 2007.

Council of Europe

Commitee of Ministers

RECOMMENDATION NO. R (93) 9

OF THE COMMITTEE OF MINISTERS TO MEMBER STATES ON THE PROTECTION OF THE ARCHITECTURAL HERITAGE AGAINST NATURAL DISASTERS

(Adopted by the Committee of Ministers on 23 November 1993
at the 503rd meeting of the Ministers' Deputies)

The Committee of Ministers, under the terms of Article 15.b of the Statute of the Council of Europe,

Considering that the aim of the Council of Europe is to achieve a greater unity between its members;

Having regard to the European Cultural Convention signed in Paris on 19 December 1954;

Having regard to the Convention for the Protection of the Architectural Heritage of Europe signed in Granada on 3 October 1985;

Having regard to the European Convention (revised) on the Protection of the Archaeological Heritage signed in Valletta (Malta) on 16 January 1992;

Having regard to the Unesco Convention for the Protection of Cultural Property in the Event of Armed Conflict adopted at The Hague on 14 May 1954;

Having regard to Recommendation 1042 (1986) of the Parliamentary Assembly of the Council of Europe on protecting the cultural heritage against disasters;

Having regard to Resolution (87) 2 setting up a co-operation group for the prevention of, protection against, and organisation of relief in major natural and technological disasters;

Having regard to its previous recommendations:
- on the specialised training of architects, town planners, civil engineers and landscape designers (No. R(80) 16);
- on the promotion of the crafts trades involved in the conservation of the architectural heritage (No. R(86) 15);
- on control of physical deterioration of the architectural heritage accelerated by pollution (No. R(88) 5);
- on measures likely to promote the funding of the conservation of the architectural heritage (No. R(91) 6);

Recognising that the architectural heritage constitutes an irreplaceable expression of the richness and diversity of Europe's cultural heritage;

Emphasising that the lack of specific legislation and measures for protection of the architectural heritage against the effects of natural disasters would lead to irreparable losses of Europe's heritage;

Stressing that in this field human life and its quality always takes priority;

Convinced that strategies for the protection of the architectural heritage can also protect human life;

Bearing in mind the work of other international organisations, especially Unesco, in this field;

Stressing the importance of international co-operation,

Recommends that the governments of the member states adopt all legislative, administrative, financial, educational and other appropriate measures, with reference to the principles set out in the appendix to this recommendation, as part of their general policy for conserving the architectural heritage;

Instructs the Secretary General to transmit the text of the present recommendation to the nonmember states party to the European Cultural Convention and/or the Convention for the Protection of the Architectural Heritage of Europe and of the European Convention on the Protection of the Archaeological Heritage (revised), and to members of the

Open Partial Agreement on the prevention of, protection against, and organisation of relief in major natural and technological disasters.

Appendix to Recommendation No. R(93)9
Principles and measures

I. Scope and definitions[1]

1. »Architectural heritage« comprises monuments, groups of buildings and sites as defined by Article 1 of the Granada Convention, as well as movable objects having particular historical or aesthetic association with the protected buildings.
2. »Natural disaster« means the occurrence of a natural phenomenon which causes extensive loss of, and damage to, the architectural heritage.
3. »Hazard« means the probability of occurrence, within a specific period of time of a natural phenomenon which could damage buildings or objects; these hazards are: seismic activity, volcanic activity, tsunami, flooding, land, earth and mud slides and avalanches, storms, fires and explosions. (Secondary hazards are often created as the result of the occurrence of a primary disaster.)
4. »Vulnerability« means the degree of damage or loss to a given element at risk or a set of such elements resulting from the occurrence of a natural phenomenon (or fire).
5. »Risk« means the expected damage to, or loss of, the architectural heritage due to a particular natural phenomenon or combination of phenomena, and is consequently the product of »hazard« and »vulnerability«.

II. Legal and administrative framework for disaster protection

1. Each state should establish and complete the compilation of lists of the buildings, objects and monuments of interest. Copies of the lists should be deposited with all the appropriate authorities.
2. In recognition of the variety and extent of the architectural heritage, priority should be given to those buildings and objects of greatest importance and to those most at risk.
3. All items on the lists should be registered, and inventories, as detailed as possible, should be produced.
4. Owners of items on the lists should maintain their property in good condition, by means of structural surveys and by the implementation of regular schedules of maintenance and repair and of risk assessment studies.
5. Authorities responsible for the architectural heritage should be empowered to ensure that the necessary surveys, maintenance and repair work are undertaken.
6. Authorities should be empowered to enforce measures to reduce risks which jeopardise the building.
7. If an owner cannot be traced, or is unwilling to undertake the work, the authorities should have the right to undertake the work, at the expense of the owner, or to effect the compulsory purchase of the property.
8. The issue of risks should be a material consideration in the assessment of town planning and land use proposals. Proposals to alter or extend historic buildings, which are likely to increase the risks, should be refused.
9. Authorities responsible for the architectural heritage should be responsible for disaster prevention and mitigation in their field of competency. They should employ trained staff to: produce and maintain records; monitor disaster activity and produce protection strategies; implement salvage, recording and emergency work; provide educational and technical assistance and guidance; and plan and implement restoration projects after the disaster.
10. Authorities should be empowered to raise, or be provided with, the resources to undertake the functions required for disaster prevention and mitigation.
11. Prescriptive building and safety codes should not automatically apply to the architectural heritage. Safety measures and standards should be attained by the application of performance requirements which employ an optimum and flexible choice of organisational, technical and structural measures.

1 Definitions 2,3,4 and 5 are based on the terms used by the Office of the United Nations Disaster Relief Co-ordinator (UNDRO).

III. Financial and insurance measures

1. Financing disaster prevention and mitigation
   Adequate and quickly accessible resources should be established both for planned maintenance, upgrading and preventive work and for contingency funding in the event of a disaster, for instance by setting up national and local funds.
2. Insurance
   i. States should remove any legal obstacles and facilitate the insurance of buildings and objects, which comprise the architectural heritage, against loss and damage caused by disasters and against theft and arson.
   ii. All steps to encourage, support and facilitate full and appropriate insurance cover should be taken.
   iii. Policies should ensure that the sums insured shall represent the full cost to be incurred at the time of the loss or damage, in order to repair, restore or reinstate the buildings or objects to their condition before the disaster, using materials, workmanship and techniques according to best conservation practice. If a policy stipulates an excess or co-insurance, the insured should prove that he has the means to cover such sums out of his own funds.
   iv. The buildings and objects should be inspected regularly by experts and insurers and the conditions and warranties stipulated in connection with such inspections should be binding.
   v. Efforts should be made to ensure full co-operation and the exchange of information and expertise between the authorities and the insurance companies.

IV. Education and training

In order to improve risk awareness, education should be promoted at different levels: to the general public through informed media coverage and in the school systems as part of the curriculum; to the professionals and technicians through general training and in specialist courses; and, to owners and occupiers of the architectural heritage by the provision of guidance.

1. Education and training should be given a high priority and be provided with an adequate level of resources.
2. Training, at a professional and technical level, must take into account the following considerations:
   i. only specially qualified and experienced teachers should be used to provide the specialist knowledge and training required;
   ii. all professionals should be taught general principles and practice at pre-qualification or undergraduate level and specialist post-graduate courses should be undertaken by those who wish to, or have to, specialise or practice in this field;
   iii. the general principles must stress the importance of:
      – the determination of the probability of an event;
      – the evaluation of vulnerability;
      – the assessment of risks;
      – preventive and protective actions and measures to minimise or eliminate vulnerability and/or risks;
      – conservation repair and maintenance methods and techniques;
   iv. all courses should be multi-disciplinary;
   v. all practitioners should undertake continuous professional training in order to keep abreast of new events and developments;
   vi. the fire brigade, civil defence and all other public emergency services, including the military, should be made aware of the importance of the architectural heritage in their region;
   vii. other interested parties such as insurance companies should be offered specialist training;
   viii. the international and regional exchange of teaching staff and circulation of ideas and information should be encouraged;
   ix. specialist research programmes should be initiated.

V. Risk assessment

1. Risk assessment should be adopted and implemented as part of the maintenance of property, at a series of management levels, by all owners, occupiers and authorities responsible for the architectural heritage.

2. Fire risk assessment and prevention/mitigation strategies should essentially be undertaken at local level by the owners and occupants of the architectural heritage.
3. The role of the authorities should be to decide on statutory matters, to co-ordinate, to provide advice and education, to provide technical and financial assistance and to provide emergency support
4. For hazards other than fire, the authorities should undertake co-ordinated research and the publication of advice at regional, national and international levels.
5. For each of the natural hazards, it is essential to quantify and assess the probability of occurrence, notably through the production of distribution studies and zoning maps, according to time and space.
6. Information should also be held on computer and be subject to constant monitoring and updating.

VI. Disaster prevention and mitigation strategies

1. Disaster prevention and mitigation strategies should be developed for the architectural heritage. All parties involved must be made responsible for the strategies but the degree and extent of involvement and responsibility will vary according to the type of hazard and disaster.
2. There are two approaches to the mitigation of risks, neither of which is exclusive:
   – to reduce the hazard or prevent the occurrence of the disaster; or
   – to minimise the loss or damage which will result from the disaster.
3. Risks are reduced by the planned application of a choice of organisational, management, technical and structural measures which must be developed on a case-by-case basis for each building, according to each disaster.
4. Guidelines and checklists for disaster prevention and mitigation strategies are described in the accompanying appendices.

Technical appendices

Appendix I

Disaster prevention and mitigation strategies

Organisational measures—General

1. Disaster prevention and mitigation strategies require preparation and planning and the implementation of technical and physical measures, in order to prevent or reduce loss or damage, both in the event of disaster and in the aftermath. It is recognised that it is impossible to prevent or to predict the occurrence of some disasters. Nevertheless, in all cases, probability studies and a thorough understanding of the risks are vital for the formulation of a strategy.
2. The success of a strategy depends on the effectiveness of regional/national/international co-operation and co-ordinated policy, as well as on the vigilance and good housekeeping/maintenance by the owners and occupiers of historic buildings. It is important that bodies responsible for the architectural heritage should adopt a major role and establish disaster protection units. »Disaster plans« should be developed and implemented immediately. They must include an evaluation of the risks, based on a thorough knowledge of the hazard, and an assessment of the vulnerability of the historic buildings. To date, risk assessment for buildings has concentrated on codes for new structures and there has been little attention paid to the collection and analysis of information specific to historic buildings.
3. The local or regional authority dealing with the architectural heritage:, the civil defence or other emergency services, in consultation with the representatives of the central architectural heritage authority, should identify and train staff to deal with disaster prevention and mitigation planning and with disaster assistance. These staff should be present during or immediately after the disaster, in order to supervise salvage and recording operations (the use of photogrammetric surveying is particularly useful) and they should be involved in any decisions on demolition and/or in the control of emergency repairs and making safe or good. According to local law and practice, staff should liaise and co-operate with contingency planning, civil defence, and emergency services in the establishment of plans and priorities and in the publication of guidelines and advice on all aspects of disaster planning.
4. The fire, civil defence and emergency planning services, as appropriate, should be trained and made aware of the

importance of the architectural and cultural heritage in their region. They should be provided with the following information:

i. full lists of buildings and objects which comprise the architectural heritage, including details of contents;
ii. copies of salvage plans and priorities concerning objects of particular interest;
iii. plans of the buildings which indicate means of escape routes, the: location of access points, fire-fighting equipment, power points and other services, and of hazardous or fragile materials;
iv. advice on the likely effect of the various extinguishing agents (water and gas) on delicate or fragile historic fabric, structure and materials—wall paintings, panelling and so on.

Appendix II

Fire organisational measures

1. For each historic building a named member of staff or of the household, with deputies, must be made responsible for fire safety. This fire safety manager, who might also be responsible for security and health, should initiate and oversee all aspects of the fire prevention or mitigation strategy or plan, in liaison with the fire brigade staff and with professional advisors (architects, surveyors, engineers, planners, specialists on historic buildings) and representatives from the insurance companies. The strategy should be subject to constant rehearsal and review, and records of all activities should be made.
2. The main objective is to reduce the risk by undertaking systematic fire prevention. A balanced series, or optimum choice, of organisational, technical and physical measures should be employed. Specifically, the strategy will seek:
   i. to assess the risk of outbreak of fire, to minimise that risk and to prepare a plan of action in the event of a fire;
   ii. to ensure safe and orderly means of escape for all occupants;
   iii. to protect the historic structure and to prevent the fire from spreading;
   iv. to establish a staff structure with clearly defined responsibilities in the event of a fire;
   v. to train and educate staff in fire-fighting and evacuation procedures, and in the implementation of salvage priorities and plans, including regular and monitored practice drills;
   vi. to prepare and maintain documentation on the layout of the premises, including detailed plans which indicate the location of fire-fighting facilities, of means of escape routes, and of fragile, important and valuable structures and fittings;
   vii. to ensure that the uses of the building are consistent with safety requirements;
   viii. to encourage good housekeeping and maintenance standards in order to reduce the risk of ignition;
   ix. to ensure that fire safety systems are correctly maintained and operational;
   x. to ensure that the building and its curtilage are not subject to either arson or vandalism;
   xi. to keep records of protection activities and to evaluate the effectiveness of the strategy.
3. The nature of fire prevention and mitigation strategy can neither be fixed nor prescribed by rigid codes of practice. It must be flexible and in each case fire safety measures should be implemented which guarantee the necessary means of escape, whilst at the same time not impairing the character and value of, or inflicting damage upon, the historic building. Individual strategies will vary but in each case the emphasis will be on prevention, preparation and vigilance rather than on provisions requiring structural alterations.
4. All structural alterations and the installation of mechanical, electrical or other systems associated with prevention, detection and fire-fighting must be agreed with the authorities responsible for the architectural heritage. The aim is to minimise the amount and effect of »passive«, physical, structural or preventive works in the interest of the historic building or artefact. A systematic approach which treats each case and building on its merits and which employs a flexible package of organisational and technical measures will reduce the need for major physical works, while, at the same time, meeting the safety legislation and requirements. Essentially, this represents a strategy of vigilance and prevention, coupled with early detection and the orderly application of evacuation and fire-fighting procedures.

Technical and practical measures

1. The sources of ignition should be identified and eliminated or minimised.
   i. All parts of the building should be kept clear of waste and rubbish. In particular, attics, basements, stairwells and areas under stairs, cupboards and empty store rooms should be inspected regularly, cleared of unnecessary material and kept clean.
   ii. Cleared strips or zones in grassland, heath or forest areas should be provided, if acceptable in aesthetic terms.
   iii. Electrical installations, circuits and equipment should be regularly tested, properly maintained, utilised and overhauled. Circuits should not be overloaded and faulty equipment and wiring should be replaced. It is advisable that main cable and fuse-boxes are located in a separate fire-proof room or area.
   iv. Naked flames from heat and light sources such as candles, torches, gas lighting and open fires or stoves should be avoided. Where their use is to be permitted, there should be careful monitoring, strict control and the provision of safety guards when unattended. The provision of suitable fire-fighting equipment nearby is essential.
   v. Only trained workmen should be allowed to undertake maintenance, repair and improvement work on historic properties. They should be made aware of the importance of the building or its fittings and should be supervised by a senior and responsible member of staff. Smoking should be banned and hot-work (blowlamps, cutting, welding, etc.) should only be allowed if there is no alternative. Any acceptable hot-work should be subject to a permit which identifies responsible parties, and allows the control on the nature, location and duration of the work and which ensures that combustible materials are removed or protected. In addition, extinguishers and alarm systems must be provided and the work supervised and monitored at all times, with provision for checks for a period after the work is completed.
   vi. Lightning conductors (arresters or rods), properly designed and maintained, should be fitted.
   vii. Chimneys should be swept regularly. All hearths, flues and ducts should be maintained in a sound condition. All cookers, heaters and boilers should be serviced regularly, be kept clear of combustible materials and be provided, where appropriate, with fire and safety guards. Kitchens, plant and boiler rooms should always be provided with suitable fire-fighting equipment and the rooms should not be used for storage.
   viii. Smoking should be discouraged in historic buildings or confined to specific fire-protected rooms or areas, installed with fire-fighting equipment and alarm systems.
   ix. Provisions should be made against arson and, in particular, premises and their curtilages should be secure against unauthorised entry. Temporary staff and visitors should be vetted and supervised, and flammable and waste materials kept out of reach.
2. Fire detection and alarm systems should be installed. The bare minimum should be fire bells or an electrically operated system. Preferably, automatic and active fire detection systems should be installed and connected to an alarm centre and to the local fire brigade. Each individual detector should be identifiable and the systems should be provided with the ability to monitor faults and false alarms. Smoke, heat and flame detectors can be installed and connected to alarm centres either electrically or by radio-link. The casings for the detectors should be unobtrusive, as small as possible and adapted in shape and colour so as not to impair their historic setting. In some cases (thatch or timbercladding, for example) external heat detectors might be recommended. In all cases, detectors and alarms must be properly and regularly maintained and responsible staff trained to understand and handle the systems.
3. Fire-fighting facilities should be provided and maintained.
   i. Fire fighting by staff or occupants should be encouraged with the provision of regular and monitored programmes of awareness and training. Premises should be fitted with fire buckets and hand-held extinguishers which must be suitable for both general and special risks. Extinguishers should be inspected and overhauled on a regular basis.
   ii. Automatic fire-fighting systems should be installed wherever possible if it can be proven that the risk would be reduced, but only where there is likely to be little or no impact on the special interest of the historic buildings. Attics and roofspaces, spires and towers on churches could be possible locations inside buildings. However, the danger of collapse or decay following operation must be carefully assessed. Industrial, commercial, transport and military premises might be capable of greater intervention than domestic properties. The installation of devices on roof ridges (particularly on thatch, grass, reed or straw) and on cornices could be considered. In dense urban areas, dry sprinkler systems in narrow gaps on facades will assist in preventing the spread of fire in urban areas. The use of copper pipes with hidden joints should be encouraged. Modem fast response sprinkler systems, based on zone signalling, should be employed. Regular maintenance, with the identification

and elimination of faults, must be undertaken. The use of sprinkler systems, particularly in areas of fragile construction. containing delicate fabrics, panelling, furniture, works of art, and so on, and in unventilated areas, must be carefully assessed.

iii. Access at all times for the fire brigade is vitally important. Roads and access points should be made and maintained wherever possible. In historic gardens and landscapes the maintenance of »green ways« might suffice. Fast and reliable routes between fire stations and historic buildings and centres should be identified and reported on maps. Water supplies should also be identified, including all mains water sources: wells, reservoirs, storage tanks and water towers, ornamental canals, ponds and lakes, swimming pools and natural sources such as rivers, streams and lakes. If there is no ready and nearby supply, then consideration should be given to the establishment of such or to the provision of an emergency storage tank of adequate capacity, suitably located, hidden or disguised. Immediate access to, and within, the building should always be reviewed and improved, for example by creating roof hatches and by ensuring that doors can be unlocked and opened.

4. In some circumstances, in particular in relation to the provision of a safe and adequate means of escape, physical alterations might prove necessary. These might include:
   i. the enclosure of stairwells, where appropriate, and protection of the means of escape;
   ii. alternative ways of protecting the means of escape, such as air overpressure systems, to prevent the penetration and spread of smoke and flames;
   iii. the installation of smoke vents and hatches, which will also allow improve access for fire-fighting;
   iv. lobbies, with new partitions incorporated around existing features;
   v. adequate fire-resistant doors including self-closers, fire-stops and intumescent strips to doorways;
   vi. the application of intumescent paint and other finishes to panelling or cast iron columns, for example;
   vii. the installation of automatic emergency lighting and signs which are independent of the normal electricity circuit;
   viii. the construction of barriers where they would not detract from the character of the building, for example in undivided roofspaces, and by the reinstatement of missing partitions.

   The approach adopted should begin with a package of »soft«, non-intrusive measures, with the application of »hard«, intrusive measures only where all other measures are obviously inadequate and jeopardise human life and the architectural heritage.
5. After a fire the following action should be taken:
   i. the minimum of making safe in order to allow inventory-taking, salvage and rescue work;
   ii. valuable artefacts and fittings, including those either dislodged or in danger of collapsing, should be recorded in situ and then carefully removed, under the supervision of conservation specialists, to a safe place for urgent conservation measures;
   iii. emergency inventory taking by appropriate means, at least plans and photographs, but photogrammetric surveying is to be encouraged;
   iv. damaged roofs should be covered temporarily, for example, with tarpaulins, and the property secured against unauthorised personnel and theft;
   v. residual water should be removed by mechanical and physical methods (suction pumps, sponges, cloths, etc.) and the building should be thoroughly dried by the maintenance and improvement of ventilation and, where possible, by the use of dehumidifiers;
   vi. investigation, by non-destructive techniques, of hidden structure and fabric must be undertaken and the installation of hygrometers should be considered;
   vii. all alarm systems and fire-fighting equipment should be reinstated;
   viii. any further structural works, including proposals for restoration and repair, or for demolition, must only be undertaken after full consultation with, and the approval of, the authorities for the architectural heritage.

Appendix III

Organisational measures against earthquakes, vulcanism, tsunami, floods, storms, avalanches and landslides or flows

The »disaster plan« should comprise a number of stages:

1. Understanding the hazard including precise data on the probability of occurrence, type, location, zoning, estimation of intensity and return period. This must be undertaken on the basis of present-day and long-term scientific research

into causes and events and their monitoring and, also, of an analysis of documentation on past disasters. Information should be published in map form, with computer archiving. All material should be kept in a safe place.
2. Understanding other geological, hydrological, meteorological and natural processes and factors—water courses and levels, soil characteristics and sub-surface geology, their behaviour in the event of disaster and their effects on the architectural heritage. Microzoning and site effect studies and maps should be produced.
3. Incorporating seismic, meteorological, hydrological and geological data into the administration of the architectural heritage and of town and land use planning in order to:
   i. identify and assess the vulnerability of the architectural heritage to hazard (by means of vulnerability and damage graphs and matrices) and assess the risks and the probable damage or loss;
   ii. minimise the vulnerability by developing and implementing plans for assistance (technical and financial) with the strengthening, repair and maintenance of the architectural heritage;
   iii. control proposed alterations to, and the use or change of use of, historic buildings where the risk is already high or might be increased;
   iv. control proposed alterations to the use of land in the vicinity (local and regional) of major or numerous elements of the architectural heritage, where there is a demonstrable risk created by that land use practice.
4. Training and preparing staff, including those from the civil defence and all other public services in the country, according to local law, in recording, salvage and emergency repair, shoring, propping and emergency protection methods and practice, and in the implementation of security measures to counter theft, arson and other criminal activity. This must include the publication of technical advice, of reconnaissance maps, inventories, surveys and regular practice and exercises.
5. Encouraging and controlling the quality of maintenance and repair of historic buildings by the initiation of action plans, in co-operation with local communities and individual owners/occupiers.
6. Preparing plans and priorities for salvage, removal, storage and emergency conservation work of movable property.
7. Identifying and marking buildings of special interest.
8. Preparing and implementing plans and priorities for full restoration in the aftermath of a disaster.
9. Ensuring that there is an adequate supply of materials for protection, conservation and restoration.
10. Ensuring that emergency teams of specially trained conservation professionals (architects, engineers. surveyors, planners, archaeologists and historians), craftsmen and builders as well as responsible members of the local communities are identified and trained for action.
11. Monitoring, evaluating and improving the »disaster plans«.

Preventive/technical measures

1. Measures for the protection of the architectural heritage against natural disasters should begin with the development of specifications and guidelines for the assessment and upgrading or strengthening of historic buildings. It is imperative that any works intended to improve the resistance of a building do not result in an unacceptable intervention into or loss of the special interest of the building. In order to achieve this goal it is important to ensure complete survey and recording, and detailed inspection and understanding of the historic building, as well as its structural system and constructional materials and techniques, its evolution and history and its conservation.
   Preventive measures fall into two categories:
   i. site specific—maintenance, improvement and emergency works to the historic building or object (the first two are undertaken on a regular or planned basis and the third, although prepared in advance, is undertaken at the time of a disaster);
   ii. site general—local or regional control of, and alteration to, land use patterns and local or regional preventive measures and works (to be planned and implemented as part of a co-ordinated programme to minimise the frequency of specific disasters, such as flooding, avalanches, mudflows and landslides).
2. Good maintenance is the single most effective means of reducing the amount of potential damage or loss. Therefore, it is essential that quality maintenance work, undertaken on a periodic basis after regular inspections (on a cycle of at least five to ten years) and employing traditional and compatible techniques and materials, be advised and specified. The use of mortars and grouting in masonry structures and the issues of tensile resistance, bonding, tying of floors and roofs to walls, and wind and water tightness in all structures, are the paramount considerations.
3. All alterations intended to improve resistance must be agreed by the authorities for the architectural heritage, hich should produce technical guidelines, after undertaking experimental, analytical and comparative research into:

i. the resistance of historic structures and materials;
ii. historic concepts and methods of improving resistance;
iii. the behaviour of different structures and materials—timber-frame, rubble or ashlar masonry, earthstructures, etc.;
iv. the implications and likely behaviour of building defects, both intrinsic and extrinsic, in the event of a disaster;
v. the evaluation of previous »modem« strengthening practice and techniques;
vi. the assessment of different levels of disaster intensity and of the frequency of occurrence.

The criteria and guidelines must specify that:

i. the degree of works proposed should not result in the total or partial impairment of the special interest or integrity of the historic building;
ii. the existing structural systems and materials are retained, respected and enhanced, if necessary;
iii. traditional materials and techniques are preferred;
iv. if new materials and techniques are proposed these should be compatible with the existing ones, durable and reversible, as far as is practicable; where these conditions cannot be met, alternative proposals should be commissioned and evaluated;
v. each building and any proposed works are assessed on their own merits and that works will be undertaken on the basis of performance requirements, not according to a prescribed code, with due consideration given to the possibility of improved and more sensitive methods in the light of technological development;
vi. the proposed works are designed according to realistic probability assessments of disaster occurrence and intensity, and graduated according to different levels of risk.

The opportunity to undertake works to improve resistance should always be investigated and the work implemented before a building is considered for a major programme of repairs or of alteration and extension. Existing inappropriate or unauthorised forms of construction, extension or alteration should be removed, where possible. by the use of legislative and financial measures. All improvements and strengthening work should be fully documented and allowing for long-term review, with the aim of establishing international standards.

4. Preparation for emergency action in the event of a disaster should identify the specific action to be undertaken. It is essential to co-operate with other authorities, both civil and military. Provision should be made for:

i. fire-fighting and protection against water damage;
ii. immediate safety works of shoring and propping;
iii. closure and supervision to ensure protection against land and water flows, air-borne debris, adverse weather and criminal activity;
iv. marking important objects and structures;
v. clearing debris, taking care to record in situ and to recover movable and displaced or fragile objects;
vi. emergency conservation work and removal to a safe place of important, movable, displaced or fragile objects;
vii. full recording, preferably by photogrammetry, of damaged structures;
viii. the reinstatement of fire and safety equipment, the provision of emergency power supplies and adequatetransportation.

For the long term, a full survey and inspection of the damage must be organised in order to plan, develop and implement restoration, repair and conservation of the architectural heritage.

5. Site general work should follow the identification of those elements of the architectural heritage most at risk from preventable disasters, such as flooding, avalanches and landslides. In these cases, prevailing land-use practices agriculture, forestry, communications, industry and general development—should be assessed and remedial measures undertaken in order to minimise the risk. Particular attention should be paid to deforestation, soil abuse and degradation, and the use of, and alterations to, ground and underground water.

In certain circumstances, physical prevention works must be planned and implemented: levees, dykes, dams, tree screens, consolidation of slopes and diversionary barriers.

Checklists

The following checklists are recommended:

A. Earthquakes

1. Seismicity

- geo-tectonic studies and mapping;
- historical earthquake information;
- instrumental recording;
- active and inactive phases (seismic trends);
- seismic gaps;
- seismicity and hazard zoning maps, of suitable sophistication;
- microzoning considering the adverse effects of subsoil.

2. Seismic damage to the architectural heritage

- quality of structural elements (brick, stone, mortar, steel and iron, wood, reinforcement and tiles; concrete);
- quality of non-structural elements (brick, mortar, stone, timber, tiles, all cladding and infill materials, roofing materials, services);
- compatibility and behaviour of various materials;
- ease of repair and availability of materials;
- availability of experienced and qualified professionals, craftsmen and labour;
- supervision and control of essential repair and upgrading work;
- foundation (type, vulnerability, intrinsic safety, differential settlement);
- damping;
- soft or stiff or mixed structures;
- symmetry (plans, elevations, openings, roofs);
- natural period of buildings according to the probable periods of the subsoil;
- emergency shoring and propping; removal of artefacts.

B. Volcanic activity

- characteristics and eruptive history;
- eruption probability;
- instrumentation to record, monitor and to provide early warning;
- proximity of the architectural heritage, according to the assumed magnitude of eruption;
- the possibility of diversions to, and the cooling of, lava flows;
- vulnerability of the architectural heritage to lava flows, bombs, glow avalanches, ash deposits and corrosive gases;
- emergency protection of roofs and of openings; removal of artefacts.

C. Tsunami

- probability of this kind of event in the region or in nearby locations which might affect the region;
- probability of its height and penetration inland; zoning maps showing areas submerged by various run-up heights;
- sensitivity of the architectural heritage to waves of tsunami type;
- the possibility of coastline protection.

D. Flooding

- probability and return periods of flooding, not only on the basis of past events but also in view of changes in land use;
- systematic mapping; publication of torrent and flooding registers;

- reliability and adequacy of records;
- seasonal variations;
- effect of climatic trends and changes in maximum short-term precipitation and floods;
- infiltration (soil, vegetation and sealed areas) and disturbance to infiltration (cropping, deforestation, removal of top-soil, traffic);
- topography of site (distance to watershed, slopes, elevation, probability of ponding);
- effect of water and rain on the architectural heritage, watertightness of buildings, damage to elements and the effects of increased humidity;
- effects of flooding on foundations and lower floors, on structural elements (walls and floors), on non
- structural elements and on fixtures and fittings
- possibility of improved drainage of the area;
- provision of protective dykes, levees, channels, and in an emergency, cofferdams and sandbags as well as pumping and dehumidification equipment; removal of artefacts;
- control of land-use/exploitation.

E. Avalanches, land- and mudslides and flows

- access slope stability, including type and composition of surface layers and the general hazard of the layers to slide (past events);
- existing slope angle in relation to safe angle;
- exposed slopes in case of avalanches;
- obstacles in the path of slides, flows and avalanches;
- extraneous factors such as water saturation, interference by construction works, seismic activity;
- systematic mapping; publication of registers;
- possible protective measures and works to include:
- drainage slopes and reduction of infiltration and percolation of water,
- obstacles, retaining basins, deflectors,
- retaining walls,
- planting;
- research to understand better the function of forests;
- control of land-use/exploitation.

F. Wind-forces and storms

- evaluation of probabilities and maps;
- return periods for given velocities in gusts;
- distribution and prevailing direction of high winds;
- topographic features which protect or expose the architectural heritage;
- effect of other structures, vegetation and other items on the exposed element;
- roofs and supporting structures (strength, fastenings or tiles), cladding;
- towers, spires, pinnacles, cupolas, parapets and other exposed elements (additional anchoring);
- large, laterally unsupported walls;
- windows and openings (shutters and other temporary means of closure against flying debris).

BLUE SHIELD SEMINAR ON THE PROTECTION OF CULTURAL HERITAGE IN EMERGENCIES AND EXCEPTIONAL SITUATIONS

Radenci, Slovenia, November 12–16 1998

The ICBS (International Committee of the Blue Shield) was created in 1996 by the following non-governmental organisations, ICA (International Council on Archives), ICOM (International Council of Museums), ICOMOS (International Council on Monuments and Sites), IFLA (International Federation of Library Associations and Institutions) to collect and disseminate information and to co-ordinate action in emergency situations, its missions being to protect and safeguard cultural heritage according to The Hague Convention of 1954 for the Protection of Cultural Property in the Event of Armed Conflict.

ICBS has participated to various conferences for the revision of The Hague Convention (Paris, Vienne, The Hague) and has organised a meeting on the situation of Afghan cultural heritage.The Radenci Seminar was the first attempt of ICBS to join efforts for the establishment of a common strategy. The seminar organised jointly by ICBS, IIAS (International Institute of Archival Sciences in Maribor, Slovenia) and the Regional Archives of Maribor, with the support of UNESCO, gathered thirty-one participants from ten countries (Belgium, Bosnia Herzegovina, Croatia, France, Hungary, The Netherlands, Poland, Slovenia and Sweden) and took place in Radenci, Slovenia, November 12-16, 1998.

All through the seminar the necessity of taking preventive measures and of having a written disaster plan was underlined, together with the need of a strong cooperation between the different actors of the response and recovery team (including the Army and the Civil Defence).

Some aspects of The Hague Convention were discussed like military necessity and the special protection and the mark up of monuments with the Blue Shield emblem was diversely appreciated by participants.

A declaration on the protection of cultural heritage was approved by the participants at the end of the seminar. The participants in the seminar resolved to:

- adopt the Radenci declaration on the protection of cultural heritage in natural and human made situations;
- take all steps in their power to publicise the declaration and to implement its recommendations in their own countries and institutions;
- further take all necessary steps to raise awareness of the 1954 Hague Convention for the Protection of Cultural Property in the Event of Armed Conflict and other international conventions for the protection, safeguard and respect of cultural heritage adopted under the auspices of UNESCO;
- request the four non-governmental organisations: ICA, ICOM, ICOMOS and IFLA, to communicate the declaration to the Director General of UNESCO and to ensure its wide dissemination.

The Radenci Declaration on the Protection of Cultural Heritage in Emergencies and Exceptional Situations

On the initiative of the International Committee of the Blue Shield (ICBS) with the participation and support of UNESCO, a seminar was held in Radenci, Slovenia, 12-16 November 1998. Representatives of UNESCO, and of the four non-governmental organisations that constitute the ICBS: the International Council on Archives (ICA), the International Council of Museums (ICOM), the International Council of Monuments and Sites (ICOMOS) and the International Federation of Library Associations and Institutions (IFLA) took part, together with delegates from cultural heritage organisations in the following countries: Belgium, Bosnia and Herzegovina, Croatia, France, Hungary, Italy, Netherlands, Poland, Slovenia and Sweden.

The participants, noting the great loss of cultural heritage in recent years due to armed conflicts and natural disasters and international efforts made to prevent such losses, examined experiences of mitigation and response in different countries and contexts, agreed on the following principles:

1. Cultural heritage embraces both moveable and immovable property? Its loss is a concern to all and its protection, safeguard and respect --in normal and exceptional situations-- must be included in policies and programmes at international, national, regional and local levels.
2. All institutions caring for the cultural heritage, and all authorities reponsible for it, should integrate risk preparedness and management within their operations to avoid loss or damage in both normal and exceptional times.
3. The goal is to avoid loss or damage to cultural heritage in the event of emergencies by improving prevention,

preparedness, response and recovery measures. It is achieved by developing, implementing and monitoring strategies which:

- assess and reduce risk
- improve response capacity
- ensure co-operation of all relevant parties in local, national and international emergency management.

Such strategies can be achieved by tactics in the form of general policies and programmes aiming at:

- linking parties to form durable networks;
- establishing and updating emergency plans with clear needs and priorities;
- drawing up programmes for dissemination of information to the general public and to decision makers;
- training personnel and developing their skills.

Specifically, means such as the following can be adapted and implemented to achieve the main goal and realise the main strategies:

- ensuring appropriate funding and other resources;
- establishing collaborative agreements with related institutions covering such areas as personnel, specialised equipment, temporary refuges;
- developing good working relationships with emergency services;
- producing information, such as manuals of emergency procedures and inventories of internal and external resources;
- carrying out regular training sessions including exercises and drills of emergency procedures in association with partners;
- setting up joint liaison committees with partners;
- ensuring adequate inventories and documentation of the institution's holdings, including remote back up copies;
- providing adequate safety and specialised emergency equipment and supplies;
- promoting the adoption and implementation of international conventions on cultural heritage;
- developing the skills of people intervening in response to disasters by producing training materials and tools;
- developing voluntary support networks, drawing upon diverse competencies.

4. With regard to the particular case of armed conflicts, the participants recognised the value of the basic principles of safeguard and respect for cultural heritage as embodied in The Hague Convention of 1954 and other conventions for the protection of cultural heritage adopted under the auspices of UNESCO, including precautionary measures such as the preparation of inventories, development and implementation of appropriate technical measures, and the adoption of national legislation and policies.

   The participants, encouraged by the examples of participating countries and others such as Sri Lanka further agreed to continue to share experiences and to co-operate in the context of the International Committee of the Blue Shield to develop national, regional and local initiatives to avoid loss of cultural heritage.

Adopted in Radenci, Slovenia, on 16 November 1998

KYOTO DECLARATION 2005 ON PROTECTION OF CULTURAL PROPERTIES, HISTORIC AREAS AND THEIR SETTINGS FROM LOSS IN DISASTERS

(adopted at the Kyoto International Symposium 2005 »Towards the Protection of Cultural Properties and Historic Urban Areas from Disaster« held at the Kyoto Kaikan on 16 January 2005)

Cultural Properties and Historic areas are irreplaceable cultural and social resources and a yetunder utilized resource for sustainable development for the benefit of mankind, which shouldbe handed down to future generations.

However, catastrophic hazards such as fires and tsunami caused by earthquakes, typhoons,floods and other disasters, pose grave threats, especially in the countries of Asia and Circum-Pacific region.

Through the reports of the participants of »ICOMOS-Japan International Expert meeting onRisk Preparedness for Cultural Heritage in Asia and Circum-Pacific Region« on the culturalheritage at risk and challenges confronting risk preparedness of cultural heritage in eachcountry, and also on the basis of site inspection, with the cooperation of the people of theKiyomizu Temple World Heritage Site and the surrounding Sanneizaka preservation district forGroups of Historic Buildings, we recognize the exceptional values that are embedded in theCultural Properties and Historic Urban Areas, but at the same time also comprehend the risksto World Heritage Sites and the surrounding areas to earthquake, typhoon, flood and otherdisasters and that appropriate actions should be taken to improve their resilience. While considering the probability of consequential fires after earthquakes resulting frominsufficient preparedness, we recognize that such cultural resources are vulnerable to suchhazards; not only in Kyoto but also in the world and that a priority list needs to be developedto focus attention and resources to improve the Historic Built Environment

However, considering the opportunity provided by the UNESCO World Heritage Convention for member states to take positive and effective measures in relation to risk preparedness at World Heritage Sites by undertaking the following activities as stated in Article 5 of the convention text,

- Integrating the protection of cultural heritage into national comprehensive planning programs [according to section (a) of Article 5]
- Developing scientific and technical studies and research and to work out such operating methods as will make the state capable of counteracting the dangers that threaten its cultural heritage [according to section (c) of Article 5], and
- Taking appropriate legislative, scientific, technical, administrative and financial measures [according to section (d) of Article 5]
- And also recognizing the great achievement of the Japanese government in stating a policy for disaster prevention of cultural properties and historic urban areas in »The Guidelines for Earthquake Disaster Prevention of Cultural Heritage and Surrounding Sites« issued by the Cabinet Secretary of Japan in 2004

We the participants of Kyoto Public Forum and ICOMOS-Japan International Expert Meeting on Risk Preparedness for Cultural Heritage in Asia and Circum Pacific Region, recommend that

1. Retrofitting and Community Infrastructure Upgrading needs to be systematically initiated to prevent loss of irreplaceable cultural resources due to disaster.
2. The information base for action programmes needs to be created and expanded to apply existing knowledge and new methods.
3. The past wisdom and experiences in disaster prevention, which were inherent in traditional local communities, and in cultural properties, historic areas and their settings should be preserved and/or recovered.
4. The environment surrounding heritage properties should be considered in the disaster prevention measures.
5. A comprehensive national policy of disaster prevention for cultural properties, historic areas and their settings needs to be formulated by States Parties who have ratified the World Heritage Convention.
6. The need for coordinated action by national and local governments should be emphasized to create an awareness of, and financial resources for addressing Historic Urban Area issues, improvement programmes and their implementation.
7. Outreach programmes in which governance and heritage interests are linked should be established in partnership with local government and universities, NGOs, and heritage entities; financial support from domestic capital markets should be provided to improve risk preparedness strategies in the present cultural heritage management measures; and clear delegation of responsibility and collaboration among various government departments should be promoted in disaster prevention and mitigation measures for cultural heritage.

National and local governments should develop capital investment plans based onsocially, culturally, economically, environmentally and technically viable sustainable riskreduction programmes.

Therefore we, the panelists of the Kyoto international symposium, »Towards the Protection of Cultural Properties and Historic Urban Areas from Disaster« and the participants of the »ICOMOS-Japan International Expert meeting on Risk Preparedness for Cultural Heritage in Asia and Circum-Pacific Region«, hereby declare that

1. Cultural heritage is a priceless and non-renewable human asset and it is our duty to raise awareness and undertake all necessary measures for protection of cultural heritage from disasters.
2. Cultural heritage embodies accumulated knowledge in disaster prevention based on past experiences and traditional practices, together with modern science and technology, which should be researched and integrated into disaster prevention measures.
3. Disaster prevention measures should address cultural heritage comprehensively, rather than in isolation, through the planning process and programmes, and in coordination with various cultural institutions, urban planning and other departments. While undertaking disaster mitigation, it is essential to adopt a coordinated multi-agency approach to cultural heritage management, in which measures for risk preparedness are integrated through effective partnerships and appropriate funding
4. While establishing mitigation measures to protect cultural heritage from disasters, the responsibility of various bodies should be clarified at all levels.
5. Undertake collaboration through international networks, especially in the earthquake prone Asia and Circum-Pacific Region, to establish project development task forces.

And consequently,

We, the participants of these meetings, ask for the improvement of disaster prevention measures in Kyoto as part of national policy and to further establish a global benchmark by setting the standard for cultural heritage disaster prevention.

Furthermore, we strongly urge all the States Parties and the concerned inter-governmental and non-governmental institutions to build an international network among experts and all those concerned with cultural heritage disaster prevention. We also urge regional development banks to support lending programmes through national and local government; to be members of project development teams to build support systems for historic urban areas; and to organize forums for mutual cooperation and information exchange.

The »Kyoto Declaration 2005 on Protection of Cultural Properties, Historic Areas and their Settings from Disaster« (hereinafter the Kyoto Declaration) was adopted at the Kyoto International Symposium 2005 »Towards the Protection of Cultural Properties and Historic Urban Areas from Disaster« held at the Kyoto Kaikan on January 16th, 2005, organized by Japan ICOMOS National Committee; Executive for »10 years Anniversary of World Heritage Registration« (Kyoto City, Preservation Technology Foundation for Cultural Heritage Building; All Japan Preservation Corporation for Roof Building Technique of Shrine and Temple; Kyoto Foundation for University Consortium; Kyoto City Preservation Foundation for Cultural Sightseeing Resources); Ritsumeikan University COE Program; Research Center for Disaster Mitigation of Urban Cultural Heritage Conference for Protection of Cultural Heritage from Earthquake Disaster and the NPO for Protection of Cultural Heritage from Disaster.

The drafting of the Kyoto Declaration began as a discussion in a small working group convened by Mr. Kanefusa Masuda, acting as coordinator of the International Expert meeting on Risk Preparedness for Cultural Heritage in Asia and Circum-Pacific Region 2005. This working group consisted of Prof. Takeyuki Okubo, Prof. Rohit Jigyasu and Prof. Kanefusa Masuda. Under the leadership of Prof. Okubo, the working group discussed elements to be included in the Kyoto Declaration for three months prior to the symposium. The outcomes of the working group's discussion were presented at the meeting of panelists and participants on 16th January, and after discussion the draft of the Kyoto Declaration was produced. The draft Kyoto Declaration was subsequently presented at the Kyoto International Symposium.

The panelists who participated in drafting the »Kyoto Declaration 2005 on Protection of Cultural Properties, Historic Areas and their Settings from Loss in Disasters« are as follows (in alphabetical order).

- Azhar Tyabji (Preservation Planner, HCP Design and Project Management Pvt. Ltd., India)
- Hiroshi Adachi (Professor, Architecture Division, Faculty of Engineering, Kobe University, Japan)
- Damin Wang (Assistant Director, World Heritage Division, State Administration of Cultural Heritage, China)
- Dhammika Priyantha Chandrasekara (Lecturer, Moratuwa University, Sri Lanka)
- Dinu Bumbaru (Secretary General of ICOMOS International)
- Earl Kessler (Deputy Executive Director, Asian Disaster Preparedness Center (ADPC), Asian Institute of Technology (AIT), Thailand)
- George Okello Abungu, (Guest Scholar from Kenya, The Getty Conservation Institute, United States)

- Hae Un Rii, (Vice President of ICOMOS-Korea, Professor, Department of Geography, Dongguk University, Korea)
- Joseph King (Acting Unit Director, Heritage Settlements Unit, ICCROM)
- Kanefusa Masuda (Professor, Research Center for Disaster Mitigation of Urban Cultural Heritage, Ritsumeikan University, Japan)
- Khizer Farooq Omer (Manager Planning, Monitoring and Evaluation, Aga Khan Planning and Building Service, Pakistan)
- Khalid El Harrouni (Professor, Ecole Nationale d'Architecture, ICOMOS Morocco)
- Masami Kobayashi (Professor Dr. Eng., Graduate School of Global Environmental Studies, Kyoto University, Japan)
- Masaru Maeno (President of Japan-ICOMOS, Japan)
- Prem Nath Maskey (Professor, Department of Civil Engineering, Institute of Engineering, Pulchowk Campus, Nepal)
- Randolph Langenbach (Building Conservation Architect, ICORP)
- Robyn Riddett (Associate Director, Allom Lovell and Associates, Conservation Architects, Australia), Secretary, ICORP
- Rohit Jigyasu (Visiting Professor from India, Research Center for Disaster Mitigation of Urban Cultural Heritage, Ritsumeikan University, Kyoto, Japan)
- Mehrdad Hejazi (Associate Professor, University of Isfahan, Iran)
- Soeroso, Director for Archaeology and Museums, Department of Culture and Tourism, Indonesia.
- Takeyuki Okubo (Associate Professor Dr. Eng., Graduate School of Global Environmental Studies, Kyoto University, Japan)

United Nations Educational, Scientific and Cultural Organzation Convention Concerning the Protection of the World Cultural and Natural Heritage

WORLD HERITAGE COMMITTEE

Thirtieth Session
Vilnius, Lithuania
8–16 July 2006
(WHC-06/30.COM/7.2)

Item 7 of the Provisional Agenda: Examination of the state of conservation of World Heritage properties 7.2 Issues related to the state of conservation of World Heritage properties: Strategy for reducing risks from disasters at World Heritage properties

(The following excerpt includes only chapters I and II)

I. Introduction to the Strategy for Reducing Risks from Disasters at World Heritage Properties

A. Rational and background to the Strategy

A.1 Introduction

1. World Heritage properties, as with all heritage properties, are exposed to natural and human-made disasters which threaten their integrity and may compromise their values. The loss or deterioration of these outstanding properties would negatively impact the national and local communities, both for their cultural importance as a source of information on the past and identity, and for their socio-economic value.
2. Risks related to disasters within heritage sites are a function of their vulnerability to different potential hazards. The recent natural disasters in Bam, Iran, or in the Old Fort of Galle in Sri Lanka are high profile examples of the vulnerability of cultural heritage worldwide. Natural heritage can also be threatened, in exceptional circumstances, by natural disasters. Hazards, however, may be also human-made, such as fire, explosions etc. Accidental forest fires, conflicts, massive refugee movements, bursting of tailing pond dams as in Doñana (Spain), are certainly a concern to natural WH sites. If natural disasters are difficult to prevent or control, hazards resulting from human activities can be avoided, and the vulnerability of heritage sites to both natural and human-made disasters can be reduced, thus lowering the overall risk threatening a property.
3. Despite this, most World Heritage properties, particularly in developing areas of the world, do not have any established policy, plan of process for managing risks associated with potential disasters. Existing national and local disaster preparedness mechanisms, moreover, usually do not take into account the significance of these sites and do not include heritage expertise in their operations. At the same time, traditional knowledge and sustainable practices that ensured a certain level of protection from the worst effects of natural hazards or human-made disasters are being progressively abandoned. As a result, hundreds of sites are virtually defenceless with respect to potential disasters.
4. Improving the management of risks for properties inscribed in the World Heritage List, therefore, is necessary to prevent and reduce damage from disasters and to preserve their cultural and natural values, thus protecting an essential support for the social and economic well-being of their communities.

A.2 Decision by the Committee

1. In 2003, the Committee had requested an independent evaluation on the Emergency Assistance Programme (Decision **27 COM 11.1**) to examine its overall performance and, more specifically, its relevance, efficiency and outcomes during the period 1998-2003. The evaluation was presented to the Committee at its 28th Session in Suzhou (China, July 2004), in Document *WHC.04/28.COM/10B*.
2. During the debate on this item, members of the Committee indicated, among the desirable improvements to

Emergency Assistance, a clearer definition of »emergency«, a more rigorous use of resources to address emergency situations strictly relating to the conservation of World Heritage Sites, and a more rapid allocation of funds. In addition, the need for strengthened policies and practices for disaster prevention or mitigation at World Heritage sites was also mentioned.

3. Decision **28 COM 10B** accordingly addresses all these points and, in its paragraph 3, invites »*the World Heritage Centre, in co-operation with the States Parties, Advisory Bodies, and other international agencies and non-governmental organizations concerned by emergency interventions, to prepare a risk-preparedness strategy to be presented to the Committee at its 30th session in 2006*«. The elaboration of a »*strategy for risk-preparedness for the regions most exposed to natural disasters*«, on the other hand, was also proposed in paragraph 45 (h) of the recommendations contained in the evaluation document[2].

A.3 Current reference to risks and disasters in the Operational Guidelines

1. Currently, the *Operational Guidelines for the Implementation of the World Heritage Convention* refer to »risks« in their paragraph **118, stating that: »**The Committee recommends that States Parties include risk preparedness as an element in their World Heritage site management plans and training strategies«, as well as in section 4b of the new format for the nomination of a property (Annex 5 of the *Operational Guidelines*), that include an item on »Natural disasters and risk preparedness (earthquakes, floods, fires, etc.)«, requesting States Parties to: »*Itemize those disasters which present a foreseeable threat to the property and what steps have been taken to draw up contingency plans for dealing with them, whether by physical protection measures or staff training*«.
2. Paragraphs 161 and 162, moreover, refer to the procedure for Emergency Nominations, reserved for properties that: »*have suffered damage or face serious and specific dangers from natural events or human activities*«, explaining that in such circumstances the Committee might consider inscription on the List of the World Heritage in Danger. Paragraphs 177 to 191, indeed, concern the procedures for the inscription of a property on the World Heritage List in Danger, which the Committee might consider when a site is »*threatened by serious and specific danger*«, which can be ascertained or potential. Among the possible factors that might endanger a property, no explicit reference is made to disasters.
3. However, paragraph 181 clarifies that: »*the factor or factors which are threatening the integrity of the property must be those which are amenable to correction by human action. In the case of cultural properties, both natural factors and man-made factors may be threatening, while in the case of natural properties, most threats will be man-made and only very rarely a natural factor (such as an epidemic disease) will threaten the integrity of the property*«.
4. Currently (March 2006), the large majority of the 34 properties inscribed on the World Heritage List in Danger (with the exception of Bam and its Cultural Landscape (Iran), and of the five natural heritage properties in Congo, for example) were included on this list due to gradual, cumulative effects, i.e. not as a result of disasters.
5. Risks are also mentioned within the format of the questionnaire for the Periodic Reporting exercise, notably in its Section II.5, Factors affecting the property (Annex 7 of the *Operational Guidelines*). Here, States Parties are requested to »*comment on the degree to which the property is threatened by particular problems and risks*«, including by natural disasters. »*Relevant information on operating methods that will make the State Party capable of counteracting dangers that threaten or may endanger its cultural or natural heritage*« is also required, including earthquakes, floods, and land-slides.
6. Finally, the *Operational Guidelines* make reference to disasters within their policies for the granting of Emergency Assistance Funds, described in paragraph 241.
7. According to this paragraph: »*This assistance may be requested to address ascertained or potential threats facing properties included on the List of World Heritage in Danger and the World Heritage List which have suffered severe damage or are in imminent danger of severe damage due to sudden, unexpected phenomena. Such phenomena may include land subsidence, extensive fires, explosions, flooding or man-made disasters including war. This assistance does not concern cases of damage or deterioration caused by gradual processes of decay, pollution or erosion. It addresses emergency situations strictly relating to the conservation of a World Heritage property (see Decision **28 COM 10B 2.c**). It may be made available, if necessary, to more than one World Heritage property in a single State Party (see Decision **6 EXT. COM 15.2**). The budget ceilings relate to a single World Heritage property. The assistance may be requested to:*
   i. undertake emergency measures for the safeguarding of the property;
   ii. draw up an emergency plan for the property.«

2 Cf. Document WHC.04/28.COM/10B, p. 19.

Point III of this document contains a review of these current policies and suggestions for their implementation. Further guidance on the use of Emergency Assistance should be provided in the future in Annex 9 of the Operational Guidelines (to be completed), entitled »Evaluation criteria by the Advisory Bodies for International Assistance requests«.

A.4 Global disaster reduction policies: the Hyogo Framework for Action 2005-2015 (HFA)

1. Risks from disasters and how to reduce them is a huge field which involves hundreds of organizations and institutions across the world, including a UN Focal Point, i.e. the Secretariat of the International Strategy for Disaster Reduction (ISDR), based in Geneva. While heritage (especially cultural) has so far developed its own policies on risk-preparedness in relative isolation, it is essential that any strategic document on disaster risk reduction adopted in the framework of an Intergovernmental Convention take stock of the global context and its terminology, lest procedures for cultural and natural heritage should be cut off from the mainstream discourse on disaster procedures within the framework of sustainable development.
2. The most recent and important global policy text on risk reduction was adopted at the UN *World Conference on Disaster Reduction* (WCDR), held from 18 to 22 January 2005 in Kobe, Hyogo, Japan, to commemorate the tenth anniversary of the tragic earthquake that struck the region in January 1995. Taking place 11 years after the adoption of the seminal *Yokohama Strategy (1994),* and five years after the end of the *UN International Decade for Natural Disaster Reduction* (IDNDR, 1990-1999), the Conference resulted in the approval of a very important document called the *Hyogo Framework for Action 2005-2015: Building the Resilience of Nations and Communities to Disasters* (also known as HFA)[3].
3. The recommendations contained in the HFA are addressed, among others, to all Organizations of the UN system, including of course UNESCO, which are called upon to implement them »*within their mandates, priorities and resources*« (HFA, page 16). The HFA identifies specific gaps and challenges in the following five main areas:
   iv. Governance: organizational, legal and policy frameworks;
   v. Risk identification, assessment, monitoring and early warning;
   vi. Knowledge management and education;
   vii. Reducing underlying risk factors;
   viii. Preparedness for effective response and recovery.
4. With respect to these main areas, the HFA has adopted five priorities for action and a series of related activities. The five priorities are the following:
   i. Ensure that disaster risk reduction is a national and a local priority with a strong institutional basis for implementation.
   ii. Identify, assess and monitor disaster risks and enhance early warning.
   iii. Use knowledge, innovation and education to build a culture of safety and resilience at all levels.
   iv. Reduce the underlying risk factors.
   v. Strengthen disaster preparedness for effective response at all levels.

A.5 Current efforts by the heritage sector in the field of disaster preparedness

1. The issue of human-made disasters and their impact on cultural heritage has been initially addressed by UNESCO through the ***Convention for the Protection of Cultural Heritage in Time of Armed Conflict***[4] (The Hague Convention -1954). Drawing from concerns originating after the Second World War and renewed in 1992 because of the high and visible incidence of disasters and armed conflict on television in the early 90s, UNESCO and other partner institutions such as ICCROM, ICOMOS, IUCN, and ICOM have in the past years further developed a number of initiatives aimed at strengthening the capacity of site managers to address risk management for World Heritage cultural and natural properties. Besides a number of international meetings and workshops, these included the preparation of guidelines for integrating risk preparedness in the management of World Cultural Heritage (Stovel, 1998) and more recently the development of *Training Kits on Risk Preparedness* by ICCROM. In parallel, ICOMOS, ICOM, the International Federation of Library Associations and Institutions (IFLA) and the International Council on Archives (ICA) established in 1996 the *International Committee for the Blue Shield*, a partnership and coordinating mechanism among the main international NGOs in the heritage sector.

3 This document is accessible on the web at: http://www.unisdr.org/(March 2006).

4 The text of this Convention is accessible online at www.icomos.org/hague (May 2006).

2. The World Heritage Centre, ICCROM, and the Agency of Cultural Affairs of Japan co-organized a Special Thematic Session on Risk Management for Cultural Heritage during the UN *World Conference on Disaster Reduction,* held in Kobe, Hyogo, Japan in Jan. 2005. This Session, in which representatives of ICOMOS also participated, resulted in an Outcome Document[5] containing some innovative ideas on the subject of risk as related to heritage. Among them was the realization that the field of heritage conservation had to harmonize its terminology and conceptual framework with the broader sector of disaster reduction (as this is called in the wider UN and international context). More importantly, the Document brought forward relatively new perspectives on risks as related to heritage, by shedding light on aspects that had been previously somehow neglected. Where previously emphasis was mostly placed on protecting physical heritage **from** disasters, the Kobe Document recognized that heritage, together with the traditional knowledge that created it, could be a fundamental resource **for** reducing risks from disasters for lives, properties and livelihoods, and therefore could contribute actively to sustainable human development. It was also recognized that heritage, given its prominent place in the community, could be used to make a significant contribution during the response phase of a disaster.
3. If these new approaches to risks for heritage were endorsed by the international community, this would greatly facilitate the integration of concern for heritage into general policies and practices for disaster mitigation, and the consideration of heritage as a legitimate beneficiary of development aid in preparation for or following major disasters. This is unfortunately not the case today, as shown by the Flash Appeal launched in January 2005 by the UN following the tsunami of South Asia[6]. Of the 977 million dollars requested to the international donor community, in fact, not one concerned the rehabilitation of the heritage.
4. While considering the issue of disasters in the context of the state of conservation of World Heritage properties, at its 29th Session in July 2005 (Durban, South Africa), the World Heritage Committee requested therefore the Centre and the Advisory Bodies to »*take into account the recommendations of the Kobe Thematic Session on ›Risk Management for Cultural Heritage‹ in the elaboration of the strategy on risk-preparedness to be examined by the Committee at its 30th session (Vilnius, 2006)*« (Decision **29 COM 7B.b**)

B. Definitions and scope

B.1 Terminology

1. The World Heritage Centre and the Advisory Bodies discussed extensively the possible scope of this Strategy, as different interpretations of the terms »risk« and »risk-preparedness« exist in the field of heritage conservation.
2. For the exclusive purpose of this Strategy, and taking into account the context of the above-mentioned decisions taken by the Committee, it was proposed that risk should be intended as risk arising from disasters, commonly defined within the UN as »*a serious disruption of the functioning of society, causing widespread human, material or environmental losses which exceed the ability of affected society to cope using only its own resources*«[7]. This strategy, therefore, will not cover gradual cumulative processes/factors affecting the state of conservation of a World Heritage property, such as pollution, tourism or urban encroachment. It is recognized, however, that the present strategy should be seen as a part of this larger context. Where possible, useful knowledge developed within this larger context should be incorporated into the actions that come out of this strategy.
3. Moreover, with an aim to conform to the universally accepted terminology, it is suggested to adopt the expression »disaster risk reduction«, rather than »risk-preparedness«. The former is indeed the term widely used by the UN system and international development agencies, to encompass all efforts at different stages to minimize vulnerabilities and disaster risks within the society, and to avoid (prevention) or to limit (mitigation) the adverse impacts of hazards, within the broad context of sustainable development. Accordingly, the present document will make reference to the widely acknowledged distinction between Readiness (before a disaster), Response (during a disaster) and Recovery (post disaster) as the three main phases characterizing all risk reduction strategies.
4. Risk, moreover, is commonly defined as the product of a threat (likelihood of occurrence of hazard) by vulnerability (susceptibility of heritage to deterioration). Reducing risk, therefore, can involve either acting on the threats or the vulnerability or both.

5 Accessible on: www.unisdr.org/wcdr/thematic-sessions/thematic-reports/report-session-3-3.pdf (March 2006).

6 Accessible on: http://ocha.unog.ch/ets/Default.aspx (March 2006).

7 Definition from the UN International Strategy for Disaster Reduction (UN/ISDR) – 2006 - http://www.unisdr.org/(March 2006).

B.2 Disaster Risk Reduction and Climate Change

1. By its Decision **29 COM 7B.a,** the World Heritage Committee requested the »*World Heritage Centre, in collaboration with the Advisory Bodies, interested States Parties and petitioners, to establish a broad working group of experts to: a) review the nature and scale of the risks posed to World Heritage properties arising specifically from climate change; and b) jointly develop a strategy to assist States Parties to implement appropriate management responses*«. The same decision of the Committee requested the Centre to organize an expert meeting and prepare a *joint report on »›Predicting and managing the effects of climate change on World Heritage‹, to be examined by the Committee at its 30th session (Vilnius, 2006)*«. The outcome of this meeting, which took place on 16 and 17 March 2006, is contained in document *WHC-06/30 COM/7.1*.
2. During the meeting, it was recognised that climate change may have both long-term, gradual effects on World Heritage sites, and may also be responsible for the occurence of more frequent or severe disasters. The present strategy does not focus specifically on Climate Change, but should be seen being complementary to the results of the recently concluded working group meeting. Where possible, this strategy will implicitly integrate concern for the possible effects of Climate Change into its provisions.

B.3 Scope of the Strategy

1. With reference to the spirit and letter of Decision **28 COM 10.B**, therefore, the scope of the present Strategy will include both the reduction of risks from disasters at World Heritage properties, and relevant World Heritage policies and procedures, including the use of Emergency Assistance under the World Heritage Fund, State of Conservation Reporting, Periodic Reporting, In-Danger Listing, and the Global Training Strategy.
2. For the purpose of this Strategy, risks are to be understood as risks that affect the cultural or natural heritage values of World Heritage sites or their integrity and/or authenticity, in line with the overall aim of the 1972 *Convention*. In practice, organizations and professionals concerned with heritage will have to work together with those institutions responsible for addressing the broader generic risks to lives and properties within the boundaries of World Heritage sites and attempt to integrate heritage concerns into the larger disaster risk framework.
3. Finally, it is important to underline that the protection from disasters of the Outstanding Universal Value of a World Heritage property may imply the reduction of risks to persons, objects and collections associated with it. In this respect, three types of movable heritage would need to be taken into account:
   i. Holders/carriers/keepers of intangible heritage;
   ii. Items located within the boundaries of a World Heritage property and which form an integral part of its significant physical attributes (such as archaeological collections or original collections or furniture within a historic building);
   iii. Items which are outside of the boundaries of the World Heritage property, but that represent essential original records of its history and value (such as archival documents, historic photographs, etc.).

II. Strategy for Reducing Risks from Disasters At World Heritage Properties[8]

A. Purpose of the strategy

1. The purpose of this Strategy is twofold:
   i. To strengthen the protection of World Heritage and contribute to sustainable development by assisting States Parties to the *Convention* to integrate heritage concerns into national disaster reduction policies and to incorporate concern for disaster reduction within management plans and systems for World Heritage properties in their territories; and
   ii. To provide guidance to States Parties, the World Heritage Committee, the World Heritage Centre, and the Advisory Bodies to integrate disaster risk reduction into World Heritage strategic planning and management, including the allocation and use of Emergency Assistance under the World Heritage Fund.

8 World Heritage properties are cultural and natural heritage sites whose significance »is so exceptional as to transcend national boundaries and to be of common importance for present and future generations of all humanity«. A list of World Heritage properties is maintained and up-dated every year by an inter-governmental Committee (also known as the World Heritage Committee) in the framework of the World Heritage Convention, adopted by the general Conference of UNESCO in 1972. More information on the Convention and its List of World Heritage properties can be found on the internet at: http://whc.unesco.org

B. Objectives and recommended actions

B.1 General considerations

1. In determining the appropriate means to achieve the expected purposes of the Strategy, the following key considerations should be made, which are relevant to all of the objectives and actions:
   i. Cultural and natural heritage, with their related technologies, practices, skills, knowledge systems and ecosystem's goods and services can play an important positive role in reducing risks from disasters at all phases of the process (readiness, response and recovery), and hence in contributing to sustainable development in general;
   ii. The key to an effective reduction of risks from disasters is advance planning and the building of a culture of prevention;
   iii. In developing plans for reducing risks at World Heritage properties it is essential to give adequate consideration to cultural diversity, age, vulnerable groups and gender perspective;
   iv. Property occupants and users, and concerned communities in general, should be always involved in planning for disaster risk reduction.
   v. The protection of the Outstanding Universal Value and the integrity and authenticity of World Heritage properties from disasters implies consideration for the associated intangible aspects and movable items that contribute directly to its heritage significance.

B.2 Objectives and priority actions

1. In order to achieve the stated purposes of the Strategy, a series of objectives and related actions have been identified. These have been structured around the five main priorities for action defined by the Hyogo Framework for Action[9], but adapted to reflect the specific concerns and characteristics of World Heritage.
2. The five objectives are the following:
   i. Strengthen support within relevant global, regional, national and local institutions for reducing risks at World Heritage properties;
   ii. Use knowledge, innovation and education to build a culture of disaster prevention at World Heritage properties;
   iii. Identify, assess and monitor disaster risks at World Heritage properties;
   iv. Reduce underlying risk factors at World Heritage properties;
   v. Strengthen disaster preparedness at World Heritage properties for effective response at all levels.
3. These objectives correspond to the spirit of Article 5 of the *World Heritage Convention*[10], requiring States Parties to take all necessary measures to ensure the protection, conservation and presentation of the cultural and natural heritage situated on their territory. They also fit within three of the four Strategic Objectives established by the World Heritage Committee through its *Budapest Declaration*[11], namely Conservation, Capacity-Building and Communication.
4. Objectives and related priority actions of the Strategy are shown in **Table 1** here below, indicating as well the different groups responsible for their implementation. These range from the States Parties to the *Convention* to the World Heritage Centre and Advisory Bodies, extending to concerned inter-governmental and non-governmental organizations at international and regional levels and academic circles. Action points are listed by the relative objective and level of implementation.

9 The most recent and important global policy text on risk reduction is the Hyogo Framework for Action 2005-2015: Building the Resilience of Nations and Communities to Disasters (HFA), adopted at the UN World Conference on Disaster Reduction (WCDR), held from 18 to 22 January 2005 in Kobe, Hyogo, Japan. Taking place 11 years after the adoption of the seminal Yokohama Strategy (1994), and five years after the end of the UN International Decade for Natural Disaster Reduction (IDNDR, 1990-1999), the HFA sets out the UN-wide strategic plan for reducing risks from disasters over the next decade. The HFA is accessible online at: http://www.unisdr.org/(March 2006).

10 Accessible online at: http://whc.unesco.org/en/175/(May 2006).

11 Accessible online at: http://whc.unesco.org/documents/publi_basictexts_en.pdf (May 2006).

Declaration on the Impact of Climate Change on Cultural Heritage International Workshop on Impact of Climate Change on Cultural Heritage New Delhi (India), 22 May 2007

NEW DELHI DECLARATION ON IMPACT OF CLIMATE CHANGE ON CULTURAL HERITAGE

Concerned with the increasing evidence of the unprecedented changes in global climate patterns and the impacts these have on heritage sites, buildings, settlements, landscape, movable objects and the living traditions in various regions of the world;

Considering the assessment reports of the Intergovernmental Panel on Climate Change (IPCC) and the work being undertaken within the framework of the UN Convention on Climate Change (UNFCCC) for climate change mitigation and adaptation;

Recalling the text of the 1972 World Heritage Convention and the decisions of the World Heritage Committee of United Nations Educational, Scientific and Cultural Organisation (UNESCO) in 2005 and 2006 for concerted action in documentation, monitoring, and provision of appropriate adaptation for the impact of climate change on the World Heritage Sites;

Further recalling the Resolution of the 15th General Assembly of International Council of Monuments and Sites (ICOMOS) at Xi'an in October 2005 to fully co-operate with UNESCO and other relevant organisations to document the impact of climate change on cultural heritage and to develop a strategy for reducing the risks to cultural heritage; and

Taking into account the evidence contained in the publication »Case Studies on Climate Change and World Heritage« published in 2007 by the UNESCO World Heritage Centre;

The experts participating in »The International Workshop on the Impact of Climate Change on Cultural Heritage« organized in New Delhi on 22nd May 2007

Acknowledge the immensely complex issue of the impact of climate change on cultural heritage, which would require sustained research, studies and documentation involving collaboration among experts from multiple disciplines;

Recognise the need to assess the risks to cultural heritage due to climate change such as glacial melts and threats of lake outburst and flooding, sea level rises, desertification, storm surges, saline water ingress and increased infestation of pests, etc;

Suggest that such assessments should be done both at the macro level (mapping heritage which would be at risk) and at the micro level (analyzing the impacts on specific heritage sites and suggesting appropriate climate change adaptation strategies);

Recommend that climate change adaptation strategies for cultural heritage should be mainstreamed into the existing methodologies for preservation and conservation of sites, buildings, settlements, landscape, movable objects and the living traditions and that appropriate standards and protocols should be developed for the purpose. Equally cultural heritage needs and concerns should be mainstreamed into institutional processes and policies for disaster reduction;

Request the national governments and international organisations to acknowledge the importance of cultural heritage for national economies, tourism, employment and community bonding and to involve the governmental and non-governmental organisations, academic institutions and individuals concerned with raising awareness, conservation and protection of cultural properties with the national and international protocols for disaster risk reduction and climate change adaptation;

Further request the national governments, inter-governmental, non governmental organisations and the private sector to engage and commit resources for the protection of specific heritage sites from the threats of damage and irretrievable loss;

Encourage scientific, technical, academic, research organisations and individuals to collaborate on specific studies related to the impacts of climate change on cultural heritage; and

Appreciate the efforts made by the National Institute of Disaster Management, New Delhi and India-ICOMOS in collaboration with the Institute of Archaeology in organising the workshop, which for the first time brought together climate change specialists and cultural heritage experts on the same platform facilitating interaction, exchange of views and

cross-fertilization of ideas, and expect these institutions to take the lead in this region of the world to promote such interactions in the future;

Encourage the dissemination of this resolution and the Delhi Recommendations of the ICOMOS International Committee on Risk Preparedness (ICORP) Workshop on Risk Management of Heritage Sites as means to promote further collaboration between professional, scientific and institutional networks.

New Delhi (India), 22 May 2007