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PLANNING CULTURAL HERITAGE PROTECTION IS EASIER THAN MANAGING AN ACTUAL DISASTER

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Abstract

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Efficient preparedness is easier to carry out comparing to dealing with consequences of disasters, anthropogenic incidents and other emergencies. Most disasters are water related, i.e. the result of flooding due to high water, water used to extinguish the fire, etc. Cultural heritage as a whole is exposed to attack from natural weathering processes, pollutants as well as water-origin disasters, fires, arson, theft, landslides or extreme weather events. In case of a disaster or any other emergency, unfortunately, no one can afford to wait for all the data and information to be entirely completed in order to make conclusions and survive a disastrous attack. When a disaster occurs and a historical object is affected, decisions must me made fast about rescue priorities, which items to save and which to sacrifice; there must be available priority lists, working guides for salvage teams as well as a disaster plan, updated lists of human resources, suppliers and service providers, lists of types and number of vehicles including passable roads available in case the movable cultural heritage evacuation becomes urgent. Emergency-response officials must be trained in measures to ensure relevant handling, conservation and care.

disaster, cultural heritage, planning, protection, fire, flood

It is impossible to avoid neither unexpected natural disasters nor the damage caused afterward. A rather fatalistic view about disasters prevailed in prehistory and much of early historical time up to about two centuries ago. They were primarily seen as the result of astrological or supernatural forces. This is illustrated by the fact that the word *disaster* etymologically entered the English language from a word in French – *desastre* – which in turn is a derivation from Latin words *dis, astr*o, which combined roughly meant *formed on a star*. In its early usage, the word had reference to unfavorable or negative effects, resulting from a star or a planet.

In time, the word disaster was applied more to a major physical disturbance such as earthquakes and floods or what came to be traditionally known as actions attributable to be supernatural. In time, disasters were formally labeled in the legal system of many countries as God will, with the implication that nothing could be done about their occurrence. Such a fatalistic attitude of cultural value does not encourage the development of new social groups or approaches to deal with or manage disasters. With the development of secularism, particularly in Western Europe and accompanying development of science as a new way of getting knowledge, a different perception of the source of disasters appeared. That time they were seen as Acts of Nature, and the responsibility was shifted from the scare to a secular view of phenomena.

The shift to a focus on Acts of Nature latently set the stage for an even more drastic shift in perception. As Voltaire said about the large casualties and losses in the 1755 Lisbon earthquake, it should not be perceived as God will but as resulting from building without heed in a highly seismic zone in

Portugal[1]. However, another and different view of the source of disasters appeared. The God will was displaced by Act of Nature, and the stage was set for the displacement by another view, i.e. that disasters resulted from Act of Men and Women. There were two trends, which affected the development of this new perception. Of the secondary importance was the slow appearance of disasters resulting from technological accidents and mishaps. These disasters were seen as resulting from inappropriate actions of human beings. The assumption was that these kinds of disasters could be prevented and their negative effects mitigated or reduced. Since this view spread, it spilled over as a possibility for all kind of disasters.

The view developed among scholars and researchers on the topic that disasters result directly and indirectly from the actions, intended or otherwise of human beings. If people are living in unprotected flood zones, in non-earthquake protected proof buildings in known seismic zones, or close chemical plants, they are creating the necessary conditions for a hazard to generate a disaster.

The earliest systematic but limited human efforts to try and to adjust to cope with some kinds of disasters were generated by recurrent fires and floods. Fires led eventually to the development of fire departments, floods evoked certain kinds of specific engineering efforts. Neither of these two kinds of agent-specific social reactions constituted any kind of social invention to develop protection system generally, although they represented specific attempts to deal with particular kinds of disasters.

Fire protection

Romans were probably the first to establish organized groups to fight fires. These bands were known as Familia Publica and were composed of slaves. They were very inefficient and slow to respond. When a fire in 6 A.D. burned almost a quarter of Rome, the Emperor Augustus abolished the bands and created the Corps of Vigiles which had full time and trained personnel and specialized equipment. They were first professional fire services in the world. They expanded from Rome into the rest of Europe, for example to Britain by at least the 5th century A.D. Such services slowly disintegrated with the decline of the Roman Empire. It was only in 13th century England that building regulations started to appear aimed at reducing the threat of fires along with the later appearance of fire insurance for adjustment to suffered losses. Fire engines, privately run by insurance companies appeared in England. Nevertheless, the Great Fire in 1666 London which left 200,000 homeless and burned out the heart of the city, led to a massive reorganization of the fire services in the city. The new arrangement became the model for the structures and functions that fire departments have in most places of the world today.

Peter Stuyvesant, the Governor of New Amsterdam, was in 1648 the first in the New World who appointed fire inspectors with the authority to impose fines for fire code violations. In 1679, Boston imported the first engine to reach America. For a long time the ten-person pump devised by the English inventor Richard Newsham in 1725 was the most widely used product. The inventor Thomas Lote of New York built in 1743 the first fire engine made in America. About 1675 leather hoses and couplings for joining components together were produced. Leather hose was sewn like a fine boot: fabric and rubber hose did not come into general use until 1870. A steam fire engine was constructed in London in 1829 but the volunteer fireman companies were extremely slow to accept it. A group of insurance companies had a self-propelled engine built in 1841 but firefighters refused its use: in Ohio, however, the public forced a steam engine on the firefighters.[2]

In the history, fire departments were overwhelmingly concerned only with fires and not with disasters in general. Recently some organizations have become a little more involved with the crisis periods or disasters. This is because in western type societies they have taken over general function of providing ambulance services and to an extent the providing of emergency medical services.

Cultural heritage approach

During most of recorded history the attitude of the population towards cultural heritage changed: as to buildings, predecessors took strictly utilitarian approach. When they fell into decay, unless protected by sanctity or taboo, they were unhesitatingly quarried to provide material for structures better fitting contemporary requirements. Fortunately, approx. 200 years ago, this unsentimental approach was modified by a change of feeling towards the past. Monuments of ancient architecture started to excite emotions and numerable questions were being raised: Could we afford to study such valuable aid to the understanding of history? Could they be carefully preserved? These days we should be more interested in the preservation and restoration of historical artifacts; in addition, there are various trainings as well: for architects, engineers, scientists, firemen, historians, archaeologists, etc. Very often they criticize one another, to a degree that harms the progress of their endeavor: the conservators criticize firemen and scientists for being interested in matters

1 DYNES, Russell, R., 2002: Community emergency planning: False assumptions and inappropriate analogies. *International Journal of Mass Emergencies and Disasters. University of Delaware Disaster Research Center,* 12,2: 141–158.

2 ROSICKÁ, Z., 2009: Fire Extinguishing Technique Can Help Saving Cultural Treasure. *Transport Means. Kaunas.,* 13,1: 159–161. ISSN 1822-296X.

that are not useful practically; there can be found ambivalence between chemists and physicists, and biologists add their own critical comments.

The causes of damage to buildings and other artifacts are almost always multiple and complex and there are urgently needed new approaches, both political and scientific (biology, chemistry, engineering, fire engineering, geology, meteorology), to the conservation of cultural property. Many scientists as well engineers are not aware of the specific requirements of conservation problems or of the various preservation and preventive treatments being employed.

Torraca[3] linked the modern era of scientific engagement with conservation to the development of modern chemistry. The preoccupation with chemically derived treatments for the consolidation of stone, the restoration of faded writing and the many other conservation-related inventions of the 19th century was spurred by the growing power of synthetic chemistry and related chemical disciplines. Brimblecombe demonstrates the parallel interest in the causative role of air pollution in inducing damage to cultural property, which may be traced to early disapproving references to smoke from the burning of sea-coal.[4]

Cultural heritage protection

Cultural heritage of every advanced sophisticated country becomes its inseparable component, whose keeping and preservation is in public interest; therefore cultural heritage protection has to be paid extremely careful attention to. It must follow the latest scientific knowledge and result from international agreements in the field of European and World cultural heritage.

Various destructive natural disasters frequently strike populated areas in addition to calamities caused by human beings, such as terrorism attacks, war, arson, etc. Hardly a month goes without a report detailing loss of property or lives or the facts that cultural institutions and valuable heritage sites are damaged, destroyed or affected. Risk of fires, floods, mud slides, avalanches, rain or snowstorms, tsunamis and other water-related emergencies are taken very seriously; therefore in-time prepared plans and strategies have to be developed, tested and implemented as well as regularly trained staff in case an emergency strikes.

It is impossible to avoid neither unexpected natural disasters nor the damage caused afterwards; however we are able to reduce the risk of loss or damage to property if a response plan is ready being tailored to the specific needs of most frequently repeated cases, e.g. floods, which happened couple of times in a particular region in the last decades. Its aim is to be better prepared and respond more appropriately to coming high water resulting in threat to inhabitants and cultural values.

The United Nations General Assembly designated the 1990s the International Decade for Natural Disasters Reduction. At that time the global awareness was raised about the need for preventing the destruction of natural disasters caused to cultural heritage. The initiatives strengthened existing frameworks for preparedness, response and recovery and put in place a number of useful mechanisms for practical assistance at site level, including logistic support in case of cultural heritage property evacuation.

Cultural heritage threats and emergencies

Cultural heritage is irrecoverable treasure of every country and its population, it indicates the development of community, philosophy, religion, science, technology and arts; it demonstrates education and culture level of every nation. This treasure has to be protected against its damage or devastation.

Historic buildings as well as collections, furniture and other cultural heritage is always at risk; risk from the daily forces of slow decay, neglect and attrition, risk in the face of natural disasters, technological accidents and even from the hand of over-jealous conservators. There must be made bridges between those responsible for planning for disasters and ordinary people whose own vigilance must be stimulated, courage should be supported. We are able to deal with a catastrophe and its consequences without having to set human life against the value of cultural heritage. The life and heritage are linked and interrelated, they are parts of indivisible whole; the efforts to secure one should serve to strengthen the other and we are able to find one common language.

Vast numbers of artifacts are preserved in archives, libraries, historical houses and museums. In the course of time, every country is confronted with damage to its cultural heritage a willful of accidental destruction. In both groups of disasters, natural and those caused by a man, we can notice the same causes and consequences. Even if we are powerless facing the outburst of celestial or terrestrial forces, we have a chance to take all known and possible measures to minimize the consequences. We need to set up a disaster plan including preventive measures to take long before the disaster strikes considering the building, the equipment, the

3 TORRACA, G., 1991: The Application of Science and Technology ot Conservation Practice. In: *Proceedings of the European symposium Technology and European Cultural Heritage.* Butterworth Heinemann Ltd., United Kingdom, 221–232. ISBN 0-7506-0237-6.

4 BRIMBLECOMBE, P., 1991: The Application of Science and Technology ot Conservation Practice. In: *Proceedings of the European symposium Technology and European Cultural Heritage.* Butterworth Heinemann Ltd., United Kingdom, 51–63. ISBN 0-7506-0237-6.

infrastructure, road system, the staff training, the emergency response, etc.

When a disaster strikes, the evacuation of people is often made immediately and when the staff is allowed to re-enter the site, it is couple of hours later and often for a limited time. However, it is essential that a building is secured and entry is allowed for a limited period of time, particularly at the beginning. Everybody knows that especially in case of a flood, it is necessary to act as soon as possible because two-three days are enough to ruin water-damaged documents. This is why we have to carry out emergency response very urgently. Nevertheless, there should always be realized that it is always better to spend a few minutes to decide on the best emergency strategy than hurrying around chaotically, which can only lead to mistakes. Using common sense prevents making mistakes. Disaster plan is a document but there is always a long way from theory to practice. The staff should be trained: time devoted to theoretical training has to be complemented by disaster workshops. Topics should include handling of damaged documents, which needs time and money. Workshops should be dedicated to specific problems, starting from discussing equipment and response measures to the handling documents necessary to get in touch with emergency services, which might be called for help in case of disaster. Organized teams of volunteers should be arranged; we should make lists of human resources, equipment and service off-site.

Water – the most urgent calamity in the Czech Republic

Most disasters are water related, i.e. the result of flooding caused by high water, storms, and leaks of water used to extinguish the fire. However, floods are one of the most common hazards in the Czech Republic. A flood preparedness strategy reduces the potential for damage to cultural heritage. It required well-integrated efforts on the part of those responsible for cultural heritage. Together there are developed balanced strategies to improve care for human life, property and heritage. Cultural heritage monuments protection problems in the Czech Republic are dated back to the 50ies of the 19th century; it is related to the so-called Vienna cultural heritage school. At the time of the so-called first Czechoslovak Republic the protection of the cultural heritage monuments was solved via Governmental Commissariat of cultural heritage protection. After World War II the Department of cultural heritage protection of the Ministry of Education and National Edification continued these activities. In 1951 the Ancient Monuments Department was established. Later decades can be characterized as years when the most significant changes regarding cultural heritage monuments occurred; specialized authorities dealing with cultural heritage pool protection were established: it consisted of the Ministry of Culture as a central state administration authority, Ancient Monuments Authority and regional cultural heritage authorities. Cultural heritage protection is included into the Constitution of the Czech Republic as well as into further legislative standards (Act on museums and galleries and on protection of objects classified as valuable for museums and galleries, Act on libraries, Act on cultural heritage pool, etc.). These above mentioned standards rigidly result from international agreements, negotiations, resolutions and charters within the European and World cultural heritage (UNESCO and Council of Europe agreements, documents issued by ICOM and other international organizations).

Considering broad experience from repeated floods in 1990s (damaged archives and libraries in Prague, Olomouc and other cities), further flood disaster plans include detailed lists of emergency procedures and recommendations, as well as updated lists of resource people to contact when the crises arises, lists of suppliers and service providers. In case of movable heritage evacuation from buildings, there are lists of types and number of vehicles including passable roads available. The flood disaster plan also include the list of people who might be able to help in case of disaster and the extent of their intervention, kind of responsibility they are given, external staff working in other neighboring cultural institutions, packaging material, cardboards, freezer companies, decontamination centers, etc. Finally, the plan also includes location of collections, rescue priorities, handling of damaged collections according to various types of water damage. Placing rescue kits or carts with essential response equipment in strategic sensitive points of the building also helps to avoid losing time later on. Such a disaster plan is intended for entire staff of the institution; different members of the staff are provided with specific responsibilities according to their abilities not to their status. That is why a storage area employee who has been working at the building, e.g. an archive, library, gallery, museum, etc., let us say for 15 years, is more qualified than a recently appointed boss to select water-damaged items to be evacuated from the shelves. The boss's job consists in coordinating operations within the emergency services and keeping in touch with the local services.

DISCUSSION

For historic properties, historical buildings content, artifacts and valuables stored and deposited, the response plan should include an inventory and documentation of fragile and significant building elements, objects and fittings, which may require special attention and possibly salvage removal and conservation prior to and in the aftermath of flooding or other disaster. Further, there should be ensured providing secure centers for emergency storage of relocated objects, and conservation treatment of waterlogged and fire-damaged materials. The plan must always

include the fact that emergency teams of trained and experienced conservation professionals, i.e. historians, craftspeople and responsible members of the local community are available for assessment and planning repair interventions during emergency-response operations. Emergency-response officials must be trained in measures to care for significant cultural heritage in the course of value of carrying out their duties. Such training includes increasing consciousness of the cultural heritage and appropriate measures to ensure its conservation and care.

CONCLUSIONS

Evacuation of movable cultural heritage is one of way of planned-ahead protection. Successful solution how cultural heritage can be saved consists, among other, in professional preparation and training of individuals involved as well as in competent and complex logistic support for every evacuation activity.

Rescue activities create situation causing physical, physiological and mental load and strain. Unfavorable factors affecting psychic activities of a human being have to be fully or partially excluded or minimized. Therefore physical preparation process has to help create, develop and improve control mechanisms finally resulting in optimum behavior and activity control of rescuers.[5]

Considering logistic support, movable cultural heritage evacuation is ready to solve the possible problems as follows: to determine in advance the place for further location; to select appropriate trucks; vehicles and handling equipment considering the specificities of load bearing capacities of historic yards, bridges and gate widths; to work and keep instructions how to manage and handle safely particular cultural heritage items; methods, how evacuated items are removed out of the buildings and loaded on and into prepared means of transport; methods and routes of transport to relocation places.

Efficient preparedness may save irreplaceable treasure being supported by skillful craftsmanship of educated restorers-conservators.

SUMMARY

Unexpected disasters and damage afterwards cannot be avoided. People and buildings, regardless what type, are often located in unprotected flood zones, close chemical plants and they create the necessary conditions for a hazard to trigger a disaster. Human efforts to learn how to cope with various disasters originated from recurrent floods and fires.

Vast number of artifacts is preserved in museums, galleries, archives and historical buildings. Fortunately, the attitude of the population toward the historical and cultural heritage changed during the history: the utilitarian approach modified by a change to feeling towards the past. The structures as well as their content are at risk from natural disasters and those caused by a man and technological failures. We are able to deal with a catastrophe and its consequences without contradicting human lives and value of cultural heritage as they are interrelated and parts of indivisible whole. Although we are powerless facing the outburst of unexpected terrestrial forces - flood, lightning, fire, earthquake, etc. - we have a chance to take all known and possible measures to minimize the consequences and try to carry out emergency response very urgently; however there should always be realized that it is better to spend a few minutes to decide on the best strategy than hurrying around chaotically, which might just lead to mistakes. We need to set up and verify a disaster plan including preventive measures long before the disaster strikes considering the building, equipment, evacuation phases, infrastructure, logistics, staff training, and the emergency response. Disaster plans are documents and there is a long way from theory to practice as in-time prepared plans and strategies have to be developed, tested, reviewed, repeatedly tailored to the specific needs, implemented, modified, i.e. it is "never-ending" process focused on reducing risk of loss or damage to cultural heritage valuables.

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