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METHODS FOR RISK ASSESSMENT OF CULTURAL HERITAGE IN THE MUSEUM DEPOS IN MACEDONIA

Abstract: This paper points out the importance of management with the depots of the museums where the majority of movable cultural heritage of these institutions is situated, emphasizing the basic principles of a “good depot”. Taking into account the positive experiences related to the protection of cultural property in the museums throughout the world, the methodology of risk assessment is elaborated, which includes identification, analysis, evaluation, monitoring and response to risks. Based on these findings, a comparison is performed with the situation in the museums of Macedonia.

Key words: cultural heritage, risks, depots, museums, Macedonia, methods, assessment.

The Macedonian museums safeguard important cultural heritage, ranging from prehistory, antiquity, the middle Ages, the new century and the latest period to the present day. The preserved samples are representative of different cultural layers that existed in the past and today. Significant part of that legacy is communicated through permanent and temporary exhibitions. Still, it is known that the majority of this heritage, according to some findings over 70%, is stored in the depots of our museums. The activities of the museums should be directed towards research, collection work, study and presentation, but also to the protection and preservation in the exhibition space and storage areas. If we know that the majority of museum objects are in storage areas, then the attitude towards the state of depots should be intensified. For this purpose we impose more questions that require a response from those engaged in the protection of cultural heritage:

- Does the museum have established depots which can store museum objects?
- To which extent is the principle 1: 1: 1 for arranging exhibition space, working space and storage areas in a museum respected?
- To which extent is the Code of Professional Ethics in safeguarding the objects in depots respected?
- Is regular monitoring of the depots carried out?
- Is risk assessment to cultural goods stored in the museums performed?
- Are the humidity, light and UV radiation regularly measured?
- Is there a staff in charge of supervision, etc.)?
- Is there a strategy for the protection of cultural property in the depots?

Some authors believe that the depots are "the heart of a museum". If the heart, as the most important body part, requires special care, so do the depots and the contents within. In this regard the Code of professional deontology obliges management staff, institutions and professionals to act for application and respect of international standards. The items in depots, as well as in other parts of the museum, can be exposed to various risks to their physical properties, but also to their value. If we want to avoid or mitigate the consequences of certain risks, it is necessary to carry out an assessment of those risks. To talk about risk assessment in the depots of Macedonia, it is necessary to understand the views in the world on this issue. The basic principles for a good depot are:

- separate space for the collections;
- trained staff member;
- basic documentation;
- appropriate interior to accommodate the items;
- appropriate equipment for environmental control;
- built in system of housing and handling;
- building designed or adapted for the protection of collections.

The ratio of the space sizes of the exhibition space, working space and storage areas should be 1:1:1.

The space standards of the depots depend on the size of the museum. With a museum of more than 50.000 items, the depot department shall encompass eleven types of rooms, namely:

- for active collections in the depot;
- for inactive collections in the depot;
- for documentation;
- for photo documentation;

- for disinfection;
- for quarantine;
- for loading / unloading;
- for consultation;
- for non-collection items;
- for materials which are not part of the collections (packaging and transport, etc.);
- for offices.

For small museums the following rooms are necessary:

- for the collections in the depot;
- for an office;
- for materials which are not part of the collections

If there is insufficient space for depots at the museum, there is a practice of hiring adequate space outside the museum and sharing this space with other institutions, however in accordance with the safety standards, taking into account protection requirements, access to the collection and use.

In such premises one can talk about providing proper care for museum collections. Nevertheless there are various risks that may endanger and destroy the cultural and natural goods stored in museums.

The endangerment can be:

- nature-borne: earthquakes, floods, landslide, wind, biological (bacteria, fungi, animals), and others.
- man-borne: war, fire, pollution, civil revolt, terrorism, structural collapse, neglect, etc.



Consequences of the earthquake in Skopje, 1963



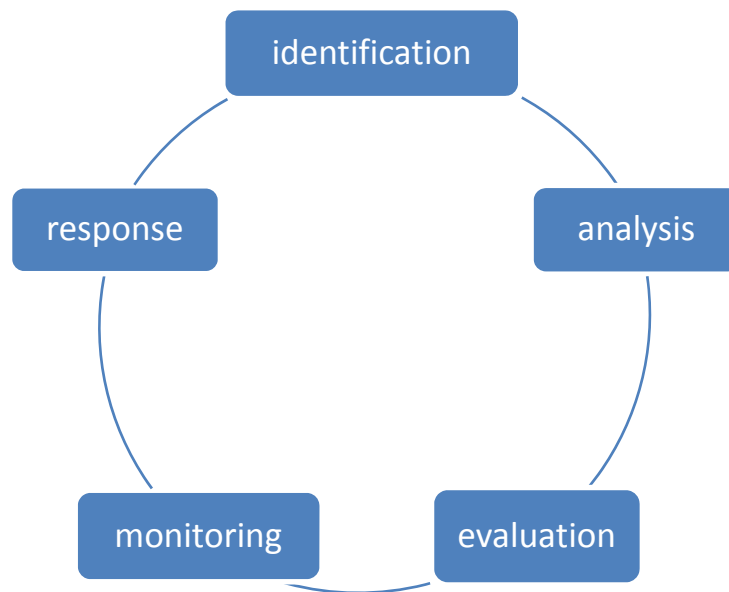
Art pavilion in Skopje after the flood in 1962

The risk is an inevitable part of individual and collective life of man. Risk is defined as the interaction between two factors as a feature of any danger or hazard. It can be expressed by the formula: $\text{risk} = \text{danger} + \text{vulnerability} / \text{capacity}$. A particular hazard can cause direct damage, indirect damage, damage to property that can be expressed in money and non-pecuniary damages, which cannot be quantified in money terms, eg., human losses.

Methods for risk assessment

Risk assessment is an integral part of the care of collections. It helps museums to set priorities for care and strategically invest in projects and infrastructure to protect their collections. Risk assessment is defined as a method for determining the probability of occurrence of the risk and damages caused by the phenomenon. Each risk requires appropriate risk management, which includes identification, assessment, evaluation and prioritization of risk. It allows institutions to plan a program that will minimize and control the probability of contact of the identified threat with the collections. The following fig. 1 presents the contents of the methodology of risk assessment.

Fig. 1: Methodology for risk assessment



The risk assessment in the museum can be done according to a predetermined procedure, according to which there is a need for a plan for decision-making and acting to mitigate or avoid the threat of danger.

The **risk identification** requires compilation of list of possible hazards for the cultural and natural goods in the depots. While preparing it, the history of the risks for the museum and society should be reviewed. For example: earthquake, landslide, fire, theft, vandalism, fraud, flood, roof leakage, sewage damage etc., pests such as rodents and insects, light and UV radiation, incorrect temperature, incorrect moisture, lack of staff, poor management in the depot etc.

The **risk analysis** implies investigation of the process of changes taking place; map of risk analysis with parameters of the modification periods is prepared; estimation of the potential hazards, applying quantitative and qualitative methodology in risk analysis. The quantitative methodology covers the frequency of occurrence of the hazard at certain intervals, while the qualitative methodology consists in displaying mathematical and statistical method, numerically representing the consequences of a hazard. In this procedure, it is

important to understand the correlation between the probability of occurrence of the risk and its consequences, and the possibilities for loss of value of cultural property.

Risk evaluation – to explain this procedure the categories probability of occurrence of risk and risk effect are used (Fig. 2). The focus is on the defined solutions for the risk of the previous methodological procedure. In that sense, solutions should be applied that involve the most precise steps to improve protection strategy. Controlled caution that will minimize exposure to risk is applied. At this stage the risks are prioritized, the standards are revised and the plans for action in emergencies are updated. So, as certain hazard is estimated, the plans for protection should include measures to eliminate or mitigate the consequences of this hazard.

Fig. 2. Risk evaluation matrix

Probability	Severity of the effect			
	Extremely harmful	major	significant	insignificant
Frequent	High Never accepted	High Never accepted	High Never accepted	Medium Carefully accepted
Probable	High Never accepted	High Never accepted	Medium Carefully accepted	Medium Carefully accepted
Occasional	High Never accepted	Medium Carefully accepted	Medium Carefully accepted	Low Can be accepted
Rare	Medium Carefully accepted	Medium Carefully accepted	Low Can be accepted	Low Can be accepted
Very low	Medium Carefully accepted	Low Can be accepted	Low Can be accepted	Low Can be accepted
Improbable	Low Can be accepted	Low Can be accepted	Low Can be accepted	Low Can be accepted

Monitoring - monitoring of the implementation of decisions taken in previous proceedings is the next procedure. The monitoring implies control activities related to the planned tasks for risk control.

Response – the final procedure is control of the readiness of staff for dealing with particular danger. A response to the perceived threat should follow, depending on the assessment of the severity of the risk, and the need for fast action.

If we reflect the above mentioned to our environment, several questions come to mind: What do the depots in the Macedonian museums look like? How does this heart beat in the museums of Macedonia?

To answer these questions it would be good to take a look at some of these photos of depots of some Macedonian museums.



Water supply, sewage pipes and pipes of central heating



Many objects at small area



Space filled with objects



Pipes of central heating



Water leakage in the depot

The depots are usually in basements, in spaces where pipes pass. Some of these rooms have improper humidity level (standard level is 40-60% throughout the year), others are with uncontrolled temperature (standard temperature is 16-25 °C) and uncontrolled light and UV radiation, they lack measuring instruments, lack spatial conditions, they are crowded with objects, there is no staff in charge, or if there is one it is without adequate training, the premises are insufficiently secured from theft. The fact that should be of concern is that certain number of depots have no special strategy for action, and others have no plans for action nor in regular circumstances neither in emergencies. The museum collections in the depots are in serious risk. One gets the impression that the approach towards the protection of cultural property in the depots is quite easy, believing that it is easy to deal with certain danger. However, without a strategy or plans prepared in advance, which will be updated every year, losses of cultural objects due to certain hazard could be high.

Conclusion

The main purpose of the risk assessment is to predict the degree of severity of the damage by the formula: Risk = danger + consequences. This will allow timely measures for elimination or mitigation of the hazard to be undertaken. Risk analysis before disaster, instead of analysis after disaster, would enable strengthening vigilance in the protection process. Continuous control and monitoring of the activities will contribute to the identification of responsibilities and accountability in the process of planning of the risk, ranging from strategic to operational levels.

After all, the presented methodology can be used in the protection of cultural property in other parts of the museum, not only in the depots. To overcome the existing situation it would be necessary:

- to change the attitude of the institutions to the problem of storage in museums;
- to prioritize the problem with the depots in the annual programs of the institutions;
- to prepare in advance the methodology while preparation of the strategies and plans for protection;
- to train and re-train the personnel;
- to prioritize the issue of storage in museums of Macedonia with the sources of funds.

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