

Documentation and Disaster Planning Supports Cultural Heritage Items' Authenticity and Integrity in Disaster Situations

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ABSTRACT

The central topic discussed in my doctoral research is the protection, rescue, evacuation, and aftercare of immovable and movable objects as well as documentary heritage collections, in accident and disaster situations. This poster presents through one of the Ph.D. research's a case study in how cultural heritage items' and collections' documentation and rescue planning either prevent or lead to significant collection damages, in terms of their authenticity and integrity. This case study analyses Hyvinkää City Museum's Valvilla Wool Mill Museum's archival magazines fire, which occurred in Finland in 2003. This fire and its extinguishing caused significant damage to the museum's archival collections. The collection's deterioration continued in the months following the fire, causing serious and irreversible secondary collection damages, such as major water damage and molding, due to a lack of documentation and disaster planning. The research data of this case study consists of transcribed interviews and archival documents. Qualitative content analyses are used in research data's analyses. Through this poster presentation, aspects of documentation and disaster planning are analyzed as methods of preventive conservation and damage prevention.

INTRODUCTION

Valvilla Wool Mill Ltd. was founded in 1892 in the city of Hyvinkää by Finnish manufacturer and engineer Ossian Donner. The establishment of the Valvilla Wool Mill (Fig. 1) began Hyvinkää's development into an industrial community. When the Valvilla Wool Mill was closed down in the early 1990s, it donated the museum and its collections to the city of Hyvinkää.

Before ownership shifted to the city of Hyvinkää, a volunteer museum professional from the Hyvinkää Heritage Association performed a pre-documentation of the archival collection with the help of a former employee of Valvilla Wool Mill Ltd. The archival collection's pre-documentation was arranged by accuracy of archive shelves, with no additional information available. Before the fire in 2003, no funding or resources could be found for the proper documentation of the archival collection, which contained 110 shelf meters of archival documents. The Valvilla Wool Mill Museum's archives consisted of material related to the wool mill's history.

FIRE

The factory hall below the Valvilla Wool Mill Museum's archival storerooms was rented to a small metal company that manufactured components for the Finnish metal industry. On the 25th of September in 2003, the company was doing metal construction demolition work using flame cutting. The metal company employee who was in charge of the work had flame-cut large metal plates on a stand near the old factory hall's wood panel ceiling when a fire broke out and spread to the archival storeroom.

When the employee noticed that there was a heated glow in the wood panel ceiling, he stopped the flame cutting and tried to extinguish the fire with the production hall's fire hydrant, but it appeared to be broken. Therefore, the fire hydrant could not be used to extinguish the fire. The old factory building's ceiling construction was not very tight; in fact, it even had gaps in some places between the wood panels. The heat produced by the flame cutting and a welding spark that had gone through one of these gaps started the fire in the production hall's multilayer ceiling. The fire proceeded into the museum's archival storeroom on the second floor.

DISASTER RESPONSE

The wool mill building's old but strong sprinklers slowed down the fire's progression and prevented the total burning and destruction of the museum's archival collection. However, the sprinklers, as well as the fire department's use of water to extinguish the fire, ensured that the entire archive was wet after the fire. A private logistic company packed and moved the damaged archival materials into an undamaged production hall of the factory building. Unfortunately, the standard packing boxes that were used in moving were made of plastic and were unventilated. This prevented the water that was trickling out of the books from draining out of the packing boxes. Unfortunately, when the accident occurred, there was no rescue plan for the museum's archival collections and no aftercare plan for fire and water damage situations. Because the rescue work was not planned, there were no material resources ready or plans for rapidly getting a large group of museum professionals into the rescue work after the disaster.

The Valvilla Wool Mill Museum's employees managed to get help from a couple of paper conservators who voluntarily planned the aftercare methods with the resources that could be provided rapidly at a minimal cost. Also, the decision-making organization of the city of Hyvinkää was not prepared for this kind of cultural heritage disaster or to provide large investments for collection rescue work at the fast rate that would have been needed in order to minimize secondary collection damage.



Fig. 1. Valvilla wool mill museum in Hyvinkää, Finland. (Picture: Pentti Halenius, 2012©).

These circumstances meant that both the rescue work and the aftercare process were done in various states of shock and with short-notice planning that was framed by the available economic and material resources. Unfortunately, the minimal economic and material resources allocated in the emergency first aid and aftercare of the collection meant, in this case, expansive growth of secondary collection damage. The only method of aftercare that could be used spontaneously and with minimal cost for wet archival material was air-drying.

COLLECTION AFTERCARE

The archival collection's aftercare was a very challenging operation and this process continued until the beginning of November in 2003. The amount of wet archival material was large (110 archive shelf meters) and it was known that, if the material was not dried or frozen within three days, the wet material would mold. The entire archival collection had both fire and water damage. The library section, where the fire had started, was badly burned. There were no resources to arrange large-scale freezing and freeze-drying facilities for archival or museum collections spontaneously in Finland at that time.

Because the archival collections were not thoroughly documented, the rescue work could not be prioritized at the level of individual documents and collection parts by their cultural and historical value. The collection items had to prioritize spontaneously through assessing the overall condition and level of damage of individual items. The prioritization was performed with a preliminary view of the collection's most historically significant parts. The archive's textile sample notebooks were given top priority in the aftercare. The main goal was to preserve the information content of these sample books and to prevent secondary damage, such as molding. Unfortunately, the drying method was not effective enough for such a large amount of wet archival material. Because the air-drying was not working effectively and the notebooks were very thick, their original leather covers were cut off to improve the drying efficiency of the textile samples and paper material in the books.

The textile sample notebooks were placed open in the vertical position on large tables, book shelves, and on the floor was protected with dust jacket. Drying papers that also held the book pages open were placed between book pages (Fig.2). Large fans were used in the production hall in the air-drying process. Hand dryers were used for more localized drying of individual sample notebooks. Unfortunately, the textile samples were attached to the book pages with water-soluble glue and, in some cases, the large fans' powerful airflow blew some of the textile samples out of the notebook pages. This resulted in some textile samples losing their link to their context information because the information existed only in the original notebook pages and covers that were badly damaged and cut out of the books.

Elements that could have increased the efficiency of the air-drying, such as wind tunnels or blotting papers under the sample books, were not utilized in this case. The paper type that was used under the items did not have similar suction quality as the blotting paper had. Also, the dehumidifying process was not particularly effective in the production hall where the drying was performed.



Fig. 2. Air drying of the damaged archival collections after the fire. (Picture: the Hyvinkää City museum©).

CONCLUSIONS AND DISCUSSION

Saving resources just after the accident and during the first weeks of the collection first aid and aftercare meant that the damage continued for several weeks after the accident. This was one of the factors that caused large-scale secondary damage. Most of Valvilla's archival collection was not destroyed thanks to museum employees who did all they could to save the collection. Also, many volunteers, including both museum professionals and ordinary people, gave critically needed help in providing first aid. Without this help, the first aid would not have been possible in such emergency circumstances.

Ineffective aftercare methods were employed due to the lack of planning and resources. This caused more permanent and serious damage to the collection and expanded the need for aftercare and remedial conservation in order to save the collection. The air-drying method was not effective enough to dry entirely wet large archival collection. Because the aftercare was done in crisis without any previous planning or experience with limited material and economic resources, the secondary damage could not be avoided.

In the case of the Valvilla Wool Mill museum's archival collection, the objective was the preservation of the information content. Information content meant, in this case, textile sample notebooks, individual textile samples, and their context information. The chosen aftercare methods also meant significant changes in the collection's items authenticity and integrity as well as their museum value.

Ph.D. RESERACH

The central topic discussed in my doctoral research is the protection, rescue, evacuation, and aftercare of immovable and movable objects, as well as documentary heritage collections, in accident and disaster situations. The study examines 19 different incidents resulting in the need for protection, rescue work, evacuation, and/or aftercare of the cultural heritage collection. The researched incidents have occurred in Finland between 1990 and 2010, and they represent both museum safety and museum security categories.

I am conducting my Ph.D. research as a case study, and I am using qualitative content analyses in analyzing my research data. My Ph.D. focuses on the research areas of museography, preventive conservation, art education, and cultural heritage education. The research provides general information about how and with what type of mechanisms collections are damaged in accident situations. The research data makes it possible to recognize the primary and secondary collection damages in researched accidents. Through analyzing the data, it will also be possible to identify potential working methods to minimize damages to cultural heritage collections in accident situations. Impending detailed research results will be published in 2013 and 2014.

ACKNOWLEDGEMENTS

I would like to thank the Jenny and Antti Wihuri foundation, the Alfred Kordelin foundation, and the Department of Art and Culture Studies at the University of Jyväskylä for the financial support and funding of my Ph.D. research. I am grateful to the Hyvinkää City Museum and photographer Pentti Halenius for providing the pictures used in my poster.

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