

# Rescue Efforts for Cultural Properties Affected by the Great East Japan Earthquake Disasters

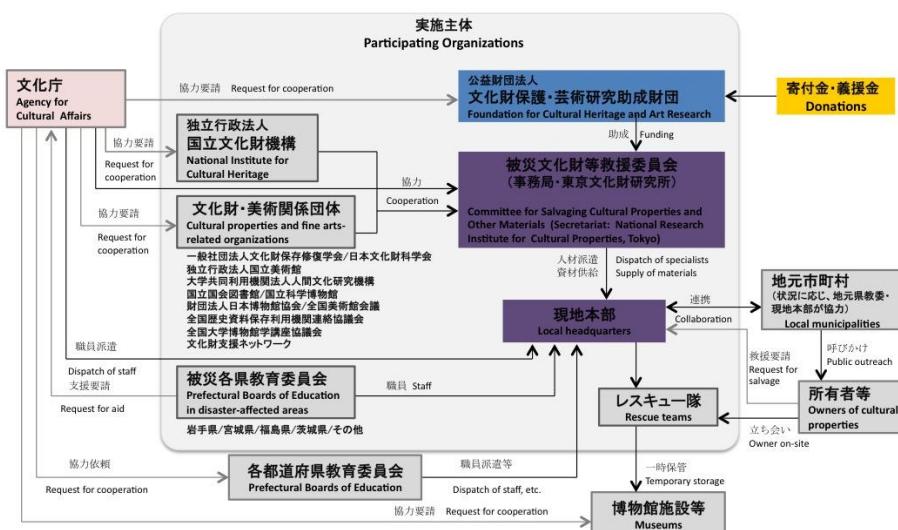
*Committee for Salvaging Cultural Properties and Other Materials Affected by the 2011 Great East Japan Earthquake and Related Disasters*

## 1. Introduction

Two years have now passed since the Great East Japan Earthquake Disasters, and in those two years the largest cultural properties rescue program in Japan's history has been mounted. These rescue operations have been conducted by a wide range of individuals and organizations, from the region's historians and archaeologists, to museum curators, cultural properties conservation specialists, as well as the general public and members of the Japan Self-Defense Forces dispatched to the area to conduct human rescue operations. Our committee served as a focal point in these operations as the Agency for Cultural Affairs' Committee for Salvaging Cultural Properties and other Materials Affected by the 2011 Great East Japan Earthquake and Related Disasters (Cultural Properties Rescue Operations). In spite of this seemingly organized approach, the actual rescue operations as carried out were by no means unified or centrally organized. Thus said, however, this single major disaster provided invaluable experience in cultural properties rescue for all of us who are cultural properties specialists.

Near-term predictions indicate that another major earthquake and resulting tsunami will strike Japan's Pacific coast, and in particular, the greater Tokyo metropolitan area. And thus, we must consider not only the accomplishments of the one-to-two-year long rescue operations, but also examine the issues that have arisen during these ongoing efforts and consider the preparations Japan must take for future such operations.

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Salvaging Cultural Properties and Other Materials Affected by the 2011 Great East Japan Earthquake and Related Disasters (Cultural Properties Rescue Operations)



## 2. The Nature of the Earthquake Disaster: The Destruction of Regional Infrastructure and Society

The main earthquake struck on March 11, 2011 and was followed by a long period of aftershocks. But more destructive than the earthquake itself was the resultant giant tsunami that struck over a large area, destroying not only homes and businesses, but also in some places greatly damaging the very fabric of regional society through the destruction of prefectural, city and village government facilities. This disaster was characterized by how this destruction of regional infrastructure meant that each region came up with a different means of restoring the necessary systems of government at the various levels for relevant cultural properties rescue operations. Fukushima prefecture is in an even more difficult situation, due to the earthquake and tsunami effects on nuclear facilities and resulting explosions and radiation contamination, and the fact that the entire populace has been evacuated and the usual local governance has been moved to other areas.



Figure 2. Six weeks later, Ishinomaki City, Miyagi prefecture (April 29, 2011).

## 3. The Objects of the Rescue Operation

The cultural properties subject to the rescue efforts of the Rescue Committee also had specific features.

The Committee's *Implementation Guidelines* defined the goal of rescue efforts in these terms: "Regardless of specific designation by national or regional authorities, efforts will focus on fine arts and moveable cultural properties, including paintings, sculptures, crafts, calligraphic works, classical books, ancient documents, archeological artifacts, historical resources, tangible folk cultural properties and other items."

First of all, the *Guidelines* clearly state that rescue of cultural properties will be “regardless of designation status.”

In the latter half of the 19th century Japan experienced the Meiji Restoration, basically a fundamental shift in the structure of the nation from a feudal state to a constitutional monarchy. The massive social changes that accompanied this political shift also inadvertently brought about the destruction of some of Japan’s cultural traditions. In order to prevent further loss, the Japanese government established a system of national treasure designation and preservation for architecture, paintings, calligraphy and religious imagery from Buddhist temples handed down from antiquity. And thus a system for understanding which works should be subject to protection was established. The various cultural properties were assigned ranks, and the higher rank items were selected and designated for particular attention. Further, this system applied to all cultural properties in Japan including those in public institutions, such as national and prefectural museums, those in religious institutions such as Buddhist temples and Shinto shrines, and those held privately by organizations or individuals. This system established in the late 19th century continues today as the Japan’s cultural properties system. The system has led to a codification of what constitutes an important property at the national level, the prefectural level, and beneath that, the local political jurisdiction level of town, city or village. As a result, when viewed from the administrative viewpoint, “cultural properties” are normally first seen as “something important enough to be designated as an important cultural property.” The Agency for Cultural Affairs’ specific introduction of the phrase, “regardless of designation status,” in their implementation guidelines indicates that from the beginning the object of these rescue operations was “everything,” not just designated cultural properties.

In the case of this disaster, the coastline area, which has been hit historically by a once-in-several-hundred-years huge tsunami event, had relatively few extant nationally designated cultural properties compared to the number preserved in more inland areas. Of course, there were also many cultural properties affected by the disaster in the inland areas that also needed attention, but this time, the policy strongly advocated saving the items that had been damaged by the tsunami and were within the greatly damaged coastal areas whose local governmental organizations were in dire straits. As a result of this focus on the coastal areas, the cultural properties that we rescued did not, as a matter of course, include nationally designated items.

Next of note is the fact that the objects of this rescue operation included items that are not generally defined as cultural properties under Japan’s cultural properties protection legislation.

Even though this feature of the operations is not clearly spelled out in the *Implementation Guidelines*, the Agency of Cultural Affairs explained that it is implied via the inclusion of the Japanese character “nado”, meaning “and others”, in the operations title. In eminently standard Japanese bureaucratic vagueness, the term *nado* is not clearly explained, but when the Agency is questioned what is included, the agency explains that since “nado” is in the title, then it is okay to interpret it as meaning that whatever you are querying about is included in the program. In essence, this sets up an all too common bureaucratic conundrum.

For example, most people would include buildings in this “nado” term. In fact, however, our Committee’s rescue operation was aimed at moveable cultural

properties, and a separate group within the Agency for Cultural Affairs, unrelated to our Committee, took on the rescue of buildings and historical sites. And yet, there are numerous archives and materials history facilities related to the fishing industry on the Tohoku coastline, and they house various specimens such as, skeletons of gigantic whales. These facilities collected stuffed specimens of the animals that live in the region, along with countless shell and plant specimens. As a result, even though the first meeting of the Rescue Committee, convened in April 2011, confirmed that these natural history materials were also covered by the Rescue Committee's remit, the fact that such materials were covered by the operation was not correctly conveyed to the relevant parties in the region. As a result, unrelated to the Rescue Committee's work, a separate rescue operation for these materials centered on Japan's network of natural sciences museums and university researchers was carried out.



*Figure 3. Rescue work on folk materials, Ishinomaki Culture Center, Miyagi prefecture.*



*Figure 4. Rescue work on a stuffed whale, Oshika Whale Land, Ishinomaki City.*

#### **4. The Preparations of the Rescue Committee and Activity Funding**

The cultural properties salvage operation had as its goal the removal of affected cultural properties and their transport to a more stable location. This almost immediate triage work began on April 1, 2011, just half a month after the earthquake. An important element in the realization of the Committee's operations was the funding arrangements necessary to retain participants and to carry out activities.

Even though there are a great number of cultural properties research specialists and conservation specialists in Japan, there is no specialist division for cultural properties conservation in either National Research Institute for Cultural Properties, Tokyo (Tobunken) itself or in the other research institute and four national museums that combine to make up the Independent Administrative Institution known as the National Institutes for Cultural Heritage. Nationwide there is no standing rescue team that can be dispatched in an emergency.

In fact, the actual rescue operation process began with the Agency for Cultural Affairs calling for volunteers and assembling a committee made up of a large number of organizations and groups involved with cultural properties, art, history and natural science, and including museums, archives, research institutes, universities and academic societies. Of those groups the Tobunken was selected as the committee's administrative office and conducted the business of running the project.

Prior to beginning the cultural properties rescue operation, the Director General of the Agency for Cultural Affairs made an announcement to the people of Japan. He stated that numerous cultural properties were in danger of complete destruction due to the unprecedented degree of the disaster. He went on to explain how, as part of the Agency's rescue operations, first they wanted to plan an emergency relocation of cultural properties affected by the disaster, and then carry out conservation work and safe storage. In order to carry out these operations the Agency intended to plan for the allocation of standing budgetary items and calculation of a supplementary budget. But in order to quickly provide the essential equipment needed for the dispatch of specialists and ensure that damaged cultural properties have safe storage areas, he stated that there must be a national coming together to support this project. Thus he solicited donations and contributions for use in carrying out these activities.

In the face of the great loss of human life and the destruction of regional social and governmental infrastructure across a wide geographical area, the funding needs of the Agency for Cultural Affairs for the rescue of cultural properties were extremely low priority amongst all the calls for funding in the immediate aftermath of the disaster. The Agency for Cultural Affairs Director General's call for donations to the cause not only indicated that cultural properties are a matter for the entire nation, but also that, in fact, it was extremely difficult for the national government to provide funding, at least in the immediate period.

## **5. Actual Funding**

The Foundation for Cultural Heritage and Art Research is the organization officially receiving the donations solicited by the Director General of the Agency for Cultural Affairs. The Foundation added the Agency-solicited funds to those accumulated through its own appeal, and over the course of two years assembled more than 320,000,000 yen. The activities expenses of our rescue committee were provided from that amount in the form of a grant.

The rescue work on the cultural properties, as mentioned in the Director General's message, was divided into two stages, namely emergency evacuation operations and later conservation and preservation work. Our Committee's mission was the emergency evacuation operations. The conservation work is also scheduled to utilize some of the funds assembled by the Foundation for Cultural Heritage and Art Research, but not all of those funds can be used solely on the activities of the Committee. Further, because there were no funds available when the rescue operations began in April 2011, the committee office set as a basic rule that foundation grant funds could not be used for dispatching personnel and told the participating groups the following:

- 1) Please dispatch specialists using your own funds to the greatest degree possible, and,
- 2) Foundation grant funds can only be used to purchase materials and on contract labor for the transportation, cleaning and other specific work.

In other words, the Agency for Cultural Affairs hoped that those groups that could provide personnel would arrange their own funding, and as one such group, Tobunken as the committee's administrative office was responsible for all expenses of that office. However, given that there were limits to the amounts of money each participating organization could provide, there were some organizations that could

not arrange personnel funds. Beginning with the arrangements meeting held in April 2011, the Committee office continued to strongly request the provision of funds by the Agency for Cultural Affairs.

In light of those requests, from August 2011 onwards the Agency provided funding to the Committee for the dispatch of specialists. Up until the end of the Japanese fiscal year, March 31 2012, this Agency funding amounted to a total of 29,000,000 yen, which covered the Committee's entire dispatch of specialists, totaling more than 350 specialists. However, during the second year of the Committee's operations, the Agency was not able to provide public funding for the Committee.

During the fiscal year 2011 that ended in March 2012, the Committee received a total of 40,000,000 yen from the Foundation, with a further 20,000,000 yen received in fiscal year 2012, for a total of 60,000,000 yen. These funds were used to purchase needed items, and to pay for specific work, such as fumigation and transportation.

Thus the above amounts from the Agency for Cultural Affairs and from the Foundation, plus the amounts of each participating organization's own funds, meant that a total of approximately 200 million yen was used for rescue operations overall by the Committee.

During the second year of the rescue operations (fiscal year 2012) the Foundation began assistance operations for the repair of cultural properties damaged in the disaster, and used a total of 120 million yen during fiscal year 2012. These assistance operations are ongoing over a five-year period.

## **6. Applications for Assistance from the Involved Prefectures and Rescue Operations**

The Committee's rescue operations were stipulated to be carried out in the prefectures that submitted formal applications for assistance to the Agency for Cultural Affairs.

This procedure is based on the basic principle stipulated in existing regulations that cultural properties are assets owned by individuals, organizations, local governments and the nation, and that the management of those assets is the responsibility of the owner. Thus in order for the government to either repair or rescue those assets for their preservation, first the owner must make a formal application to the national government for that assistance. Prefectural governments also received applications from local governments, individuals and organizations who own cultural properties. Those applications at the prefectural level were organized into a list, and then after that process was completed, each prefecture submitted applications for assistance to the Agency for Cultural Affairs.

And yet, during this disaster, the prefectural and local governments were swamped by the need for aiding the human victims of the disaster, and found it difficult to make a functional system for dealing with the rescue of cultural properties. In particular, the prefectures that line the Tohoku coast were extremely hard hit, and with the exception of Miyagi prefecture that submitted a request for aid to the Agency at an early stage in the post-disaster period, all of the other affected prefectures took much longer to submit their own applications.

As well, many of the inland prefectures, which sustained damage from the earthquake itself but not to the degree sustained by the coastal prefectures struck by

the tsunami, thought that it was not necessary to submit a formal request for aid to the Agency.

As a result, regardless of the considerable number of both coastal and inland prefectures in Tohoku and the Kanto regions that were affected by the disaster, the actual activities of the Committee were limited by existing bureaucratic regulations to the four prefectures that submitted formal aid applications, namely Miyagi, Iwate, Ibaraki and Fukushima prefectures.

## **7. The Position of Cultural Properties Rescue Operations**

However, even in Iwate, Ibaraki and Fukushima, where the Committee's work was delayed, from early on, independent rescue operations were being carried out by a collaborative effort between museums and universities within the affected prefectures. Even after the Committee's own work began, there were many instances of independent operations already begun, unrelated to the Committee, and without any contact with the Committee's Administrative Office. At times the organizations that make up the Committee went out on their own to affected museums in prefectures that had not submitted the requisite formal rescue requests. The Committee's Administrative Office did not limit these independent actions by Committee member organizations in order to maintain control. Further, organizations and individual specialists not affiliated with the Committee entered the disaster zone through their own routes, and began rescue operations via their own means and methods, which the Committee did not regulate.

In the affected regions that had not submitted rescue requests to the Agency, however, each respective prefecture's own Board of Education, prefectoral museums, universities, and NGO groups conducted their own independent cultural properties rescue operations.

As a result it would be correct to say that the Agency for Cultural Affairs' "cultural properties rescue operations" was by no means the entire work on the matter, and was indeed only one part of the overall work done by the people who actually rescued cultural properties within the disaster zones.

## **8. Results**

Thus the cultural properties rescue operations were conducted over a two-year period with these various complications included, and a large number of cultural properties materials were rescued through the efforts of the heterogeneous participating organizations and specialists.

### **1) Miyagi Prefecture**

When Miyagi prefecture submitted its formal request for aid, they made a list of 17 sites that needed rescue. In order for the work to proceed to plan, a regional operations office was established at the Sendai City Museum in accordance with Committee implementation guidelines. A regular staffing system centering on Tobunken staff was established, and work was to be carried out through the cooperation of various committee member organizations. The first work conducted by the Committee was the removal of art works from the Ishinomaki Culture Center in late April 2011. Specialist art conservators and numerous art historian specialist curators who were dispatched by the Japanese Council of Art Museums carried out this work.

As surveys of the area progressed, the rescue subject list rapidly ballooned to around 40 sites by July 2011. In spite of this development, work had advanced to the stage of the emergency evacuation of cultural properties for approximately 80 percent of those sites, and by the end of July the regular staffing system was disbanded. At the same time, subsequent work included the evacuation of remaining items and the temporary storage of items that could be anticipated to be in longer-term storage until the items could be returned to their owners. As a result, the Miyagi Network for Preserving Historical Materials was established among the various organizations within the prefecture to conduct this ongoing work. At present, the cultural properties rescue operations being carried out in Miyagi prefecture are being conducted with this Network as the main operational group, with the Committee providing support when needed. By fiscal year 2012, the second year of the Committee's work, the Network was conducting almost all of the remaining work. The list of sites to be aided had grown to approximately 60 sites.

The methodology established in Miyagi prefecture seemed advisable for implementation in the other affected prefectures, but given that each prefecture had a different situation, the methodology was not simply duplicated as such in other prefectures.



*Figure 5. Rescue work on fine arts, Ishinomaki Culture Center, Miyagi prefecture.*

## 2) Iwate Prefecture

In Iwate prefecture, thanks to the efforts of the various universities within the prefecture and with the support of the Japan Self-Defense Forces, the removal of more than 400,000 collection items from the Rikuzentakata City Museum and the Rikuzentakata City Sea and Shell Museum was begun in early April 2011 and completed by early May 2011. This was a somewhat earlier start of operations than the Committee's first formal work in Miyagi prefecture, which was finally started in late April 2011. The rescued cultural properties were transferred to elementary school buildings that had fallen into disuse in the mountainous areas of Rikuzentakata and to the Iwate Prefectural Museum in Morioka. Their emergency triage was conducted independently by a surviving staff member of the Sea and Shell Museum with resident volunteers in Rikuzentakata and by staff from the prefectoral museum working with resident volunteers. Iwate prefecture's rescue request was sent to the Agency in mid-May, asking for material support for the emergency storage and disposition work that was being carried out at the prefec-

al museum with insufficient funds. As a result, the Committee's work in Iwate prefecture centered on the emergency storage and disposition handling of objects that had already been removed from the disaster zone. However, 120 paintings, including large-scale oil paintings, remained on the 2nd floor of the Rikuzentakata City Museum, whose entire staff of 6 was killed in the tsunami. The rescue of these paintings by the members of the Japanese Council of Art Museums began in mid-July 2011. From late August to the end of September, fumigation, cleaning, media reinforcement and other emergency procedures were carried out in prefectoral facilities that had been vacant for the preceding decade. These abandoned schools and other such unused facilities were used because the great majority of the rescued cultural properties were so heavily soiled or damaged that they could not be taken as is into other museum settings. Given that there were problems in assuring enough evacuation sites for all of the people displaced by the disaster, difficult problems also arose over finding enough secure locations for all of the rescued materials.

Of course these school facilities were originally designed with large windows as part of the plan to create healthy places for children, and thus without modification these buildings were not appropriate cultural properties storage areas given the external light that entered the facilities and the fact that they were subject to sudden and massive changes in temperature and relative humidity. As a result, the objects that had been so carefully rescued from the disaster zone were affected by the bad environment of their new location, with mold quickly developing. There also arose the possibility that the health of the people managing the cultural properties would in turn be adversely affected by the environment, and there could be a worsening of the cultural properties' own condition. With the hollowing out of Japan's rural populations and the country's declining birthrate, in recent years more and more school have been abandoned throughout Japan. And, of course, electricity, water and other services had been cut off to those abandoned facilities. Thus, major improvements were needed in the environmental conditions of those facilities before they could be used for the storage and preservation of cultural properties.



*Figure 6. Rescue work on paintings, Rikuzentakata City Museum, Iwate prefecture.*



*Figure 7. Emergency handling work at an abandoned elementary school, Rikuzentakata City, Iwate prefecture.*

### **3) Ibaraki Prefecture**

Ibaraki prefecture was also greatly damaged by the earthquake. Of the 744 nationally designated or registered cultural properties affected by the disaster over-

all in Japan, Ibaraki was home to 182 of the affected registered works. However, the formal rescue request from the prefecture was not sent until July 2011, and the Committee's operations in the prefecture were limited to only four cases of evacuation and emergency handling. The Committee's work at these four sites was completed during the first year of its operations. Along the coast, the tsunami damage to cultural properties was amazingly small, and in both the coastal and inland areas of the prefecture only a few moveable cultural properties, the focus of the Committee's work, were damaged. The Committee was only minimally involved in the prefecture thanks to the fact that the prefecture's universities and other related organizations carried out the majority of the rescue work for documents and other historical materials.

#### **4) Fukushima Prefecture**

The first thing confirmed about Fukushima prefecture was that its large-scale museums and cultural properties facilities were not greatly affected by the disaster, as was the case in Miyagi and Iwate prefectures. Given the evacuation of residents and establishment of an exclusion zone following the explosions and radiation release at the Fukushima Daiichi Nuclear Plant, the lack of detailed information about the damage to cultural properties in that exclusion zone meant that Fukushima prefecture faced a completely unique situation unlike those of other affected prefectures.

In response to the rescue request sent to the Agency for Cultural Affairs in July 2011, the Committee evacuated materials from Sukagawa City's archaeological cultural properties storage facilities outside the exclusion zone. This facility was not damaged by the tsunami, but rather by floodwaters from the earthquake-damaged upstream water storage ponds. Sukagawa city itself is outside the exclusion zone. However, given the concerns about the radiation levels of the cultural properties themselves and their surroundings, careful surveys were made prior to operations to assure the safety of all involved personnel. In turn, these operations themselves proved to be effective preparation, including the production of an operations manual for the work that was to be carried out within the exclusion zone during the second year of our operations. Up until that point, Japan had absolutely no experience in the emergency removal of cultural properties from within a radiation-contaminated area.

Given that the entire population of each local government jurisdiction within the exclusion zone was evacuated from the area and set up in shelters elsewhere, each local government office set up temporary headquarters at other locations in Fukushima prefecture or other sites. Of course, given these circumstances, the staff members in charge of cultural properties in each of those jurisdictions gave precedence to the work of supporting the evacuated residents, and there was no time for them to devote to their usual duties. In the face of the magnitude of the operations, even though they worried about their other responsibilities, this situation continued for a year. In this regard, the situation differed completely from those of Miyagi and Iwate prefectures, where even though cultural facilities staff members were lost in the tragedy, the local residents and administrative structures remained in situ and the cultural properties staff could themselves carry out the management of the rescued cultural properties.

The Committee was originally set to run for one year, but largely due to the fact that cultural properties rescue in Fukushima prefecture had been essentially impossible during that first year, the committee's remit was extended for another year. As a result, the Rescue Committee Administrative Office was in contact with Fukushima prefecture from April 2012 onwards. And with the intention of determining what should be done with the cultural properties that remained in each of the affected towns, investigations continued on the actual levels of radiation in each area, and preparations continued for actual rescue operations within the exclusion zone. As a result, the cultural properties materials owned by the municipal history and ethnography museums of the three towns, Tomioka, Ōkuma and Futaba, located within the exclusion zone were rescued.

The points of concern in these operations were:

- 1) Maintaining worker safety (monitoring radiation levels in work areas, creating an operations manual for entering the exclusion zone and a manual for operations within the zone, and sharing of all involved information)
- 2) Relevant cultural properties materials and their radiation levels (establishment of proper measurement and recording methods and procedures, confirmation at what levels of radiation items could be safely taken out of the exclusion zone, and management of radiation levels of the materials in their temporary storage facilities after removal from the exclusion zone).

Regarding worker safety, relevant standards are not exclusive to the cultural properties field, but rather are standards set by the Ministry of Health, Labor and Welfare. These standards stipulate what measures must be taken by operation management to protect the health and safety of staff members involved in work carried out in areas contaminated by the radiation released in the aftermath of the disaster that exceed 2.5 micron Sv/h. Surveys conducted in Fukushima prefecture before our operations began indicate that ambient radiation levels inside the archives were all around the 0.2 micron Sv/h level, and thus the interior of these facilities were not environments that were subject to these regulations regarding the dispatch of staff members for work in those environments.

Conversely, we paid particular attention to removed cultural properties to ensure that their presence did not upset the residents around their temporary storage facility. In Japan the movement of materials emitting radiation levels of more than 1,300 cpm is not permitted in the normal environment. This regulation was greatly relaxed to the level of 13,000 cpm in regards to the household goods removed by residents of the Fukushima exclusion zone when they were evacuated. We did not accept this relaxed standard but rather made the decision to not remove cultural properties whose radiation levels exceeded the original 1,300 cpm standard. Of course, one of the important factors in this decision was the fact that we knew before operations began that the cultural properties in the archives had actual measurements in the 200–400 cpm range.

Radiation amount readings are influenced by the background radiation in the area where the measurements are made. As a result, compared to the radiation level readings obtained inside the archives within the exclusion area, which has high levels of background radiation, the readings on materials when they were in their new temporary storage areas all came in at about half to one third of the levels recorded within the exclusion zone.

The removal operations in the three towns began in August 2012 and was carried out over a four-month period. The cultural properties materials were moved initially to the old school building classrooms of the Prefectural Souma Girls High School (school closed for more than a decade) located in Souma city, to the north of the exclusion zone in Fukushima prefecture. The organization and preparation of the materials was conducted at that site. The items will be moved during the summer of 2013 to prefabricated cultural properties storage facilities newly constructed in Shirakawa city, Fukushima prefecture.

Given the possibility that radiation and particle contaminants might adhere to the workers during these operations, from the time they enter the site until they enter the archives, staff members wear high-density nonwoven polyurethane white work coveralls and overboots, and carry personal radiation exposure counters to ensure that airborne radiation level measurements are scrupulously monitored during all operations. We were able to establish an operations manual for work in this particular environment through the various procedures involved in these exclusion zone operations.

The issue of those cultural properties materials in facilities other than the archives or outdoors within the exclusion zone remains an issue for post-fiscal year 2013 work. Safe levels of radiation were measured inside the steel-reinforced concrete construction of the archives itself, however there were considerable radiation levels measured outside. The surface radiation levels of the cultural properties outside of the archives themselves exceeded 1,300 cpm. Given the fact that these materials are in structures that might collapse due to damage from the earthquake, and simply in terms of the issue of radiation contamination and its effects, these materials must be transferred to safe locations as soon as possible. Even two years after the disaster those materials are still in an untouched state. Even after the Committee has been disbanded, Tobunken will work with Fukushima prefecture to conduct a survey of conditions on site and produced a new operations manual for the handling of the affected materials.

## **10. Issues**

The situation in each of the affected prefectures differs, and that means naturally that the actual rescue operations conducted in each also differ. And yet, the basic operations—namely the evacuation of affected cultural properties, their emergency handling, such as cleaning and reinforcement, and their placement in temporary storage—have produced considerable results over the course of two years. However, if we boast only of the numbers as results of the work, then it is clearly not a proper evaluation of this project in which we participated as “cultural properties specialists.”

This work revealed a variety of issues. While I cannot go into all of those problems, in general, I can highlight the following two issues:

- 1) The lack of a systematic and coordinated rescue approach structure for use in the time of natural disasters,
- 2) The lack of technical preparation for the rescue, handling, and storage of cultural properties subject to various disaster damage situations.

And, no matter how many participating organizations were gathered, the lack of a funding basis hampered the effective implementation of the Committee’s work.

In general, the question kept coming up, since the Great Hanshin Earthquake in 1995 wasn't there supposed to have been some systematic preparations, some resolution of problems based on the experience of rescuing affected cultural properties in the recurring natural disasters that have somewhat regularly struck Japan. Unfortunately, the reality is that such preparations were not made after the 1995 events. When the direct-hit, large-scale earthquake predicted for the near term by Japanese specialists hits either Tokyo or the Tokai-Nankai coastline, naturally it can be imagined that the damage to society and cultural properties will differ from the types of damage experienced in the Tohoku area disaster. We cannot expect, like this time, that garnering the people's sheer will and understanding will suffice. We must analyze our current experiences from various angles, and begin to go about actually resolving the various systematic inadequacies that are revealed by such a consideration. And indeed, this will probably become an exercise in resolving the fundamental structural problems that exist within Japan's cultural properties protection administration.

On the technical front, however, there is an even more difficult problem for those of us who specialize in cultural properties preservation. What technologies should we use when there are unique circumstances around the kind of damage experienced by the works and the situation they are in until the rescue operations can begin. In particular, the work this time focused mainly on the area struck by the tsunami, so that in itself made the situation of the affected cultural properties unusual. Undoubtedly our techniques and experiences were inadequate for dealing with that situation.

Objects soaked in seawater and then left in that condition for several months after the disaster meant that mold had started to grow and other staining advanced. If an object was left where it was, the destruction of the form and state of the work would progress. At the same time, if it was moved, then the new location would be contaminated. This disaster produced huge amounts of such materials.

Given the theory that the salt found in the seawater-soaked cultural properties will suppress mold growth, there were some cases where some small amount of mold suppression occurred in early stages. Past a certain time period, however there are cases of other strong and poisonous mold growths, and research has confirmed that proper handling and preparation work must be done as quickly as possible. Further, it has also been confirmed that when seawater-soaked materials are fumigated with chemical solvents, the gel-type fumigant does not fully absorb into the materials, and further, the fumigant chemically reacts with the sodium in the seawater to produce carcinogenic materials. These factors mean that even though speedy triage of the cultural properties is essential, the scientific clarification of the processes used and their effects is equally important.

There was a sense of confusion regarding how to triage the paper materials soaked in the tsunami waters. Various methods were proposed, and the people involved worried, how to choose the best method, and what if the selected method is wrong. Of course, this time we learned that because circumstances differed, there really was no way to decide and no one best method. In spite of such issues, it is true that we need an emergency response manual for use when disasters occur. For these kinds of issues, we must analyze and learn from our current experiences with

a view to preparation for the next disaster, and construct some countermeasures for future events.

## **11. In Conclusion**

The majority of the cultural properties that have been evacuated have finished their immediate triage stage and are being moved to temporary storage. However, it will take several more years before the damaged museum and archive facilities can be restored and we can get to the state where the materials can be both stored and displayed in these restored facilities. During that time, there are very few of the works that have been restored to a clean enough state to be safely deposited in other museums. Thus many of these works will face long periods of storage in less than ideal storage environments for cultural properties, namely those found in abandoned school classrooms and other such facilities. Thus ongoing operations will be necessary, such as the improvement of the environmental conditions of these storage facilities and the monitoring and confirmation of the preservation state of the stored materials themselves.

At the same time, the Committee bears the responsibility of correctly compiling and analyzing the experiences of this two-year effort, and on that basis, proposing an appropriate form of rescue operations for cultural properties affected by disasters.

This is not only a case of learning from the March 2011 disaster. On the basis of the 1995 Great Hanshin Earthquake, improvements were made in display and storage facilities in museums and other cultural facilities, and seismic mitigation structures and facilities became more common. As a result, damage from the March 2011 earthquake itself was quite minimal at many museum facilities in the affected areas. This was even the case at the Ishinomaki Cultural Center, Miyagi Prefecture, which was directly hit by the tsunami. Thanks to its sturdy construction and the effectiveness of the seismic isolation base holding the structure, the sculptures and other works in the second floor display galleries were largely undamaged. Thus in the face of disaster, the most important thing is technological improvement and planning for its dissemination.

At the same time, fundamental issues must be resolved in the organizational and systematic structures of such work. The following elements are essential as countermeasures in the event of a major natural disaster and when cultural properties are affected by that disaster.

- 1) Quick establishment of rescue countermeasures office
- 2) Establishment of countermeasures offices in the affected prefectures
- 3) Securing funding that does not depend solely on contributions and outlay by the organizations participating in the rescue

Then we might ask, what kind of system must we construct to make the realization of these three factors a natural progression? Our proposals and opinions must be linked to a reform of the national system.

On the other hand, regionally focused natural disasters occur regularly in Japan. It is not realistic to consider taking the major action of establishing a rescue committee or rescue countermeasures office for each of those situations. As mentioned at the beginning of my paper, this is why it is essential for a standing rescue team to be established.

Such a rescue team would have as its primary duties:

- 1) Technical research on emergency cultural properties evacuation and triage methods,
- 2) Practice of technical procedures in conditions similar to an actual disaster area,
- 3) Personnel development so that rescue can be conducted nationwide.

In order to address these issues, it is my hope that we can quickly research and realize the best possible organizational structure whose primary responsibility is the rescue of cultural properties.

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**Japanese to English translation by Martha J. McClintock**