# Sendai City Disaster Reconstruction Memorial Committee Report

Proposal for Preserving the Memory of the Great East Japan Earthquake for Global Posterity

Sendai City Disaster Reconstruction Memorial Committee December 2014

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## **Definition of terms:**

- *Igune*: Also called *yashikirin*. A traditional tree windbreak surrounding farm houses. Offering protection against winter winds from the northwest, *igune* were once a big part of everyday life, hiding homes from sight and providing farmers with building materials, fuel and food provisions.
- Greenery: Refers to trees and flowers growing in isolation in forests, grassland or farmland or on the surface of rivers, ponds and other bodies of water. (from the Sendai City Basic Plan for Greenery 2012-2020)

# Introduction

Since the Great East Japan Earthquake struck Sendai on March 11, 2011, the city has given first priority to reconstructing the lives and homes of those affected by the disasters. Sendai is now engaged in various reconstruction projects based on the Sendai City Earthquake Disaster Reconstruction Plan, formulated in November 2011. In the plan are listed ten reconstruction projects for Sendai's one million citizens, the tenth of which is an earthquake disaster memorial project to "preserve the memory of the earthquake disaster for future generations."

Established in Sendai in July 2013, the Sendai City Disaster Reconstruction Memorial Committee serves as a forum to discuss how to make the Earthquake Disaster Memorial Project a reality. The purposes of the committee are to examine and discuss from various positions the form in which Sendai City and its citizens can in the future share the following with the world for posterity: 1) the facts of the earthquake and tsunami disasters, 2) the various events that Sendai citizens experienced, and 3) the current reconstruction process. Given its purposes, the committee thus comprises members of the younger generation in addition to scholars and those already strongly active in NPOs and other organizations working in the affected areas.

The committee deliberated over the course of ten meetings, including a session open to the public in Sendai Mediatheque and visits to damaged areas on the eastern coast. Committee deliberations mainly focused on brainstorming and discussing ideas on how best to preserve for posterity the valuable experiences and feelings from the disasters: the mournful emotion of losing loved ones, the gut-wrenching feeling of losing your hometown, the lessons learned from the disasters. Given the broad scope of the themes presented, the committee had city officials from various departments attend meetings, and also took the opportunity to solicit Sendai Mayor Emiko Okuyama for her opinion. Where the Earthquake Disaster Reconstruction Plan made mention of gathering and using disaster records and building a memorial, this committee has fleshed out the discussion to more specific initiatives.

This report will serve as a summary of the outcomes of committee discussions to date, given in the form of proposals of the committee. It is the committee's hope that Sendai City will embark on the Earthquake Disaster Memorial Project based on this proposal.

Ikuko Miyahara Sendai City Disaster Reconstruction Memorial Committee Chairperson

The Memorial Wish Preserving the Memory of the Great East Japan Earthquake for Global Posterity monuments and ruins Honor citizen-run archive Create and use a Utilize the po the arts to rer the disasters : ecovery Rebuild and the Teizan Canal Restore greenery Create in eastern Senda opportunities **Project implementation** memories s to in cooperation with a remem newly-established learning Use organization with ther On Oı to O Project site development

### **Conceptual View of Report Proposal**

# 1 Introduction

# 1—Basic Principles

# 1-1 The Earthquake Disaster Reconstruction Memorial Wish

With this memorial, Sendai citizens preserve their memories and experiences from the Great East Japan Earthquake in order to protect lives from future disasters around the world for generations to come

About the Memorial Wish

The Great East Japan Earthquake occurred at 2:46 pm on March 11, 2011.

The earthquake caused tsunamis that ravaged the coastal areas of Sendai, claiming many lives. The incessant shaking of the earthquake destroyed more than 5,000 residential lands in the highlands, shredding essential utilities in the heart of the city and shrouding daily life in fear and uncertainty.

The Great East Japan Earthquake was a great ordeal for Sendai, the Tohoku region and Japan as a whole.

Our hearts sunk from the grief of lost loved ones while suffering through miserable circumstances. Our towns were deeply wounded. The Sendai landscape we had all grown to know and love—the coastal villages, *igune*, farmland, forests, the Teizan Canal—all suffered extensive damage.

Despite all this, hope swelled within us on the strength of the bonds between friends and family and overwhelming support from across the country and the world, including sponsored music, cultural and sporting events.

Nature provides us infinite bounties in our daily lives. On rare occasion, however, nature brings with it harsh calamities in the form of earthquakes, tsunamis, typhoons, volcanic eruptions and other disasters.

While the normally gentle disposition of Sendai's bountiful natural surroundings belie such potential, the Sendai area has come face-to-face with the wrath of nature repeatedly in the past.

Despite our ancestors leaving records in efforts to pass down their experiences with tsunamis 400 and 1,000 years past, to date the majority of us have failed to heed their warnings and were caught unprepared.

The Great East Japan Earthquake has forced us to reflect on these things.

How great was the damage? How did we help each other to overcome it? How hard are we working to recover and rebuild? And how do we feel about all of it?

It is our duty and obligation to pass on these memories and experiences from the Great East Japan Earthquake beyond this generation to posterity, and beyond the seas to the rest of the world. Doing so will leave others more prepared for future disasters and save lives.

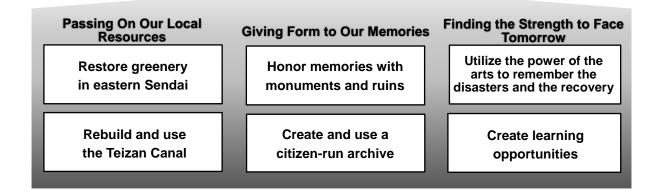
This is why we the citizens of Sendai value memorials of the earthquake disaster and subsequent reconstruction to pass on our memories in the form of actions performed, as well as structures and items either built or reclaimed. We must pay tribute and testament to those whose lives were lost, and we must continue to pray for the safety of future generations.

# 1-2 Six Initiatives to Preserve Disaster Memories and Experiences

The following six initiatives in particular are required for Sendai's Earthquake Disaster Reconstruction Memorial to preserve the memory of the Great East Japan Earthquake.

# The Memorial Wish

## Preserving the Memory of the Great East Japan Earthquake for Global Posterity



# Significance of Initiatives for Earthquake Disaster Reconstruction Memorials

## Passing On Our Local Resources

Resources specific to Sendai that were damaged must be reassessed and restored as symbols of our recovery. These include the pine forests grown along the coast as promoted by the Sendai Domain in feudal times, the emblematic *igune* and farmlands, and the Teizan Canal, which had a great deal to do with the prosperity and modernization of the feudal town at the foot of Sendai Castle.

## **Giving Form to Our Memories**

Monuments, ruins and archived memories from the disasters must be preserved and continue to be shared so that the lives lost, the regions which were greatly damaged and the threat of disaster from natural events will not be forgotten with the passing of time.

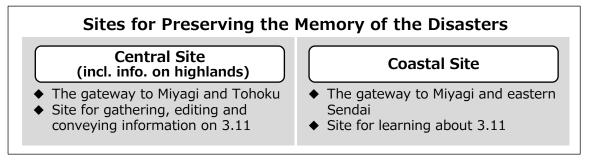
## Finding the Strength to Face Tomorrow

Creations from the artistic power that encouraged us after the earthquake and comprehensive learning based on our disaster experiences have the power to help the world overcome disasters to come and preserve our memories for posterity.

# 1-3 Site Development (See pp. 11-13 for details)

In implementing the Earthquake Disaster Memorial Project, the sites must organically link the various initiatives and preserve our disaster memories and experiences for the global posterity. With Sendai serving as the heart of Tohoku, the role of these sites in drawing visitors to the Tohoku region and the Miyagi coast is also important.

Given this, it would be effective to move the project forward by developing two sites and leveraging their respective features. One site to be located in central Sendai would be for gathering, editing and conveying disaster memories and experiences. Sendai is a convenient location where both people and information gather. The second site would be located on the tsunami-ravaged coast as a starting point for visiting ground zero for the tsunami and touring the coast to relive the memory and experiences of the disasters.

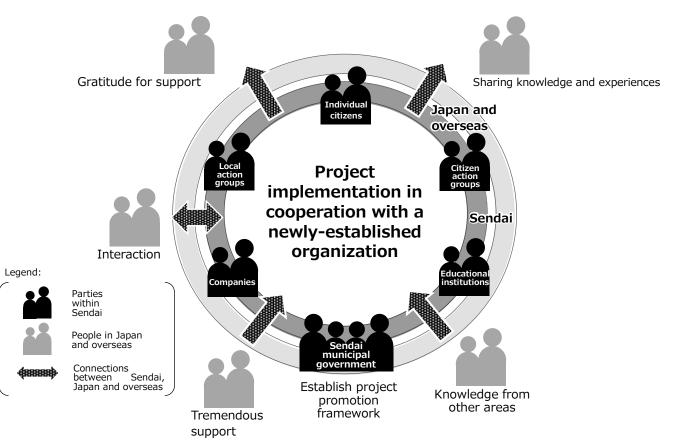


# 1-4 Project Advancement (See pg. 14 for details)

With the Earthquake Disaster Reconstruction Memorial Project spanning so many fields and implementing bodies, a collective effort by the core organization and various other parties will be needed in order to move the project forward.

Sendai City must establish the core organization for advancing the project and handle drafting and implementing policy, project evaluation and communication of project information in Japan and overseas. It will also be vital to gather the knowledge of various entities and push the project forward as a collaborative effort in order to share disaster memories and experiences with a wider global audience for future generations.

For the project to move forward, the different circumstances of the many citizens of Sendai must be encapsulated into one voice to properly convey the memory of the 3.11 disasters.



# **2** Working Towards Creation of the Memorials

# 2-1 Direction of the Six Initiatives

# **Restore Greenery in Eastern Sendai**

### Passing on our local resources

# Background

- With its expansive farmland, eastern Sendai provided a livelihood for farmers and food for Sendai citizens. This coastal area also had pine forests as promoted by the Sendai Domain in feudal times and *igune*, a tradition passed down with local farm life. Such greenery provided a sage lifestyle at one with nature and a local cycle for resources.
- Tidal flats near the coast and the Seaside Park fostered a diverse ecosystem, serving as a place for many Sendai citizens to both relax and interact with the waterfront and nature.
- The greenery of eastern Sendai, which had supported the City of Trees and formed a beautiful landscape, was severely damaged in the tsunami.

# Facets

# **Regrowth of Greenery in Eastern Sendai**

- The Great East Japan Earthquake must be utilized as an opportunity to reaffirm the versatility of the greenery in eastern Sendai. Sendai citizens must replant, grow and sustain this greenery as a symbol of the recovery.
- *Igune* were once closely intertwined with life in local farm villages, and the pine forests were a presence in people's lives. Times have since changed, and people's lives have suffered great damage at the hands of the tsunami. Thus, we need to take another hard look at how we interact with greenery in our lives and work to regrow these *igune* and pine forests.

# Direction

# 1. Create a system for citizens to replant and grow trees

In regrowing the greenery, it will be important to create a system for more citizens to get involved in replanting and growing the trees with their own hands. The experience of growing something and sharing in the post-disaster regrowth process will engrain it in people's memories so that they will pass it down to future generations.

# 2. Establish relationships with greenery

We need to recreate an environment in which Sendai citizens can feel a closeness with greenery through continuous interaction. More than just protecting and raising the greenery, we must also impart on citizens the wisdom of such a lifestyle, knowledge of how to recycle resources, and the ecosystems of such greenery. Doing so is sure to spark a deeper interest and understanding of nature.

# **Rebuild and Use the Teizan Canal**

## Passing on our local resources

# Background

- The Teizan Canal is the longest canal in Japan, stretching along the Sendai Bay coast from the Abukuma River to the old mouth of the Kitakami River.
- Part of the canal was excavated in the Edo Period, where it supported the prosperity of Sendai Castle and the castle town as a logistical route for transporting lumber and rice. When completed in the Meiji Period, it cemented its historical importance and heritage as the logistical route then supported Miyagi's modernization.
- Besides its functional uses for flood control and irrigation, the canal provides views of nature in a rich waterfront landscape.
- The Teizan Canal was also damaged by the tsunami in the Great East Japan Earthquake, and canal reconstruction work is underway.

# Facets

# Rebuilding and Using the Teizan Canal as a Key to Connect People with Coastal History and Nature

• Taking things a step further from merely reporting the tsunami damage and recovery process, a restored the Teizan Canal must be seized as a key piece in telling of Sendai's original charm and the history of its coast, as well as about its rich natural environment and culture. Sendai should find a way to leverage the canal to bring people together while gathering the collective wisdom of its citizens.



# Direction

# 1. A narrative of history, culture and rich nature

The Teizan Canal must be used to tell of more than just the threat of tsunamis—the narrative should include the history of the Lord *Date Masamune* opening Sendai in 1601 and the lifestyles, thoughts and livelihoods of those who lived around the canal. It should tell of the canal's rich nature and ecosystems. Hiring guides who can speak of the Teizan Canal and the earthquake will play an important role in this process.

# 2. Create various interactive opportunities

It will be important to create various opportunities for citizens to interact with the canal in order to share with them its charm through sports, leisure activities, memories from the disasters, its beautiful landscape, its rich nature and more.

# Honor Memories with Monuments and Ruins

## Giving form to our memories

# Background

- The tsunami in the Great East Japan Earthquake claimed many lives in coastal Sendai.
- Sendai has repeatedly been sieged by large tsunamis in the past: once in the late 800s and again in the early 1600s. Still, despite our ancestors leaving us shrines and stone markers in attempts to warn us, we failed to heed their warnings in our disaster measures.

# Facets

# Building Monuments for the Victims and Tsunami-hit Areas, and Preserving Building Remains that Illustrate the Threat of Tsunamis

- It is important to keep the disaster fresh in people's memory so as not to forget the lives sacrificed, those areas hit especially hard and the threat of disasters.
- Leaving former schools, home foundations and other building remains as-is in areas with heavy damage is a powerful reminder of area memories and the threat of disasters.
- The idea is not to just leave such remains as standalone monuments, but to make them symbols of the work and lives of those who lived in that area. Details such as area history, the reconstruction and recovery process, and how people evacuated are also important to remembering the area as a whole.



# Direction

# 1. Building areas for mourning the lost and monuments in tsunami-hit areas

We can express our feelings and emotions for those whose lives were sacrificed and areas lost no matter how much time has passed by building areas to pray and monuments.

# 2. Preserving building remains that illustrate the threat of tsunamis

Actual buildings are perfect for illustrating the sheer scale of the damage wrought, making it all sink in as fact. Additionally, adding reflections from former area residents to preserved building remains can also help to preserve memories of that area.

# **Create and Use a Citizen-run Archive**

### Giving form to our memories

## Background

- Each and every citizen in Sendai was affected by the compound disasters of the Great East Japan Earthquake differently—even within the city limits, those on the coast, in the highlands and downtown all faced different issues.
- Information technology has greatly advanced since the Great Hanshin-Awaji Earthquake and the 2004 Chuetsu earthquake in Niigata Prefecture. There are a great deal of self-taken photos and other personal records of those affected.
- Those who have been uprooted after long years working and living in extensively damaged areas have had their lives drastically changed. The more time passes, the harder it will be for them to express their emotions on their previous lives, the people and the enormity of the damage.

# Facets

# Building an Archive of Emotions and Feelings, and Continuing to Tell Citizen Stories

- How exactly the disasters affected people was different depending on how the place where they were was affected, their position, their family background and many other factors.
- In addition to a traditional archive for recording earthquake-related incidents and facts, a "memory archive" including people's feelings and emotions needs to be developed in order to leave a more lasting imprint. This memory archive will require an editing process wherein citizens get involved by sharing their individual memories for the public records.
- This archive will require a means and place for people to reflect upon, remember and speak about their lives and livelihoods before the 3.11 disasters. The archive should be made accessible to future generations everywhere to better reach a wide audience.

# Direction

# 1. Build an archive of the feelings of individual citizens

Records of scenes, people's lives and work, how they were affected by the disasters, and their recovery process should be collected, recorded, sorted, edited and stored along with the associated feelings and emotions. These records are to be developed for use in an archive. During the collection and editing processes, getting large numbers of citizens affected by the disasters involved will help to keep their memories fresh in mind.

# 2. Establish a site to preserve disaster experiences

Establishing an archive site will get more citizens involved and interacting with each other. It also allows for larger amounts of memories and experiences to be collected, recorded, sorted, edited, stored and shared.

## 3. Archive various modes of representation

In order to make the feeling and emotion of the disaster memories more accessible to a wider audience, it is essential that the archive include many various techniques and modes of representation: preserved earthquake relics on display, recreated scenes and memories from affected areas, written accounts from affected people, picture books, paintings, novels and more.

# Utilize the Power of the Arts to Remember the Disasters and the Recovery

## Finding the strength to face tomorrow

## Background

• In the aftermath of the 3.11 disasters, many Sendai citizens had their spirits broken. In many cases, they found their courage again on the strength of the bonds with those around them, the overwhelming support provided from Japanese and foreign organizations and participating in or attending musical, artistic, and sporting events, as well as cultural festivals and other activities.

• Memorial services have been held in various locations in order to pray for and honor the lives of those lost in the disasters.

# Facets

# Using Memorial Artistic and Cultural Works as Tools to Fuel the Recovery and Remember

- It is important to preserve our memories of the 3.11 disasters to keep us from forgetting with the passing of time to pray for and honor the lives of those lost, as well as to remember our gratitude for those who have offered their support.
- The arts and culture have the power to inspire, soothe and remind us of the encouragement we received after the disasters. This power must be harnessed as a driving force for recovery.
- Any artistic and cultural works created can be preserved for posterity. These works can also transcend linguistic barriers to convey our prayers and pay tribute to the deceased, as well as provide a link to the world.



# Direction

# 1) Promoting cultural and artistic initiatives

In response to the disasters, we need to re-examine the significance of the arts, events and festivals. Along with starting new festivals and events, we must cherish our sports, music, art and other forms of expression that gave us hope when we were broken and remold them, rooted in the community.

# 2) Develop sites to preserve cultural and artistic works for posterity

We must develop a site to represent the power of the arts and cultural events as a symbol of our recovery. The site should preserve this power for global posterity and invigorate Sendai, sending a wave of recovery through all of the Tohoku region.

# **Create Learning Opportunities**

## Finding the strength to face tomorrow

## Background

- Most of us failed to respect the warnings left us by our ancestors regarding tsunamis and their damage. In light of the Great East Japan Earthquake, we must reflect on this and rectify things.
- Since the earthquake and tsunami, the damaged areas have been re-evaluated with various historical and scientific studies of the affected areas.

# Facets

# Creating Comprehensive Learning Opportunities to Highlight Areas and Empower Us to Decide, Act and Create for Ourselves

- In the event of a disaster, everyone must make individual decisions and act upon them. To do so, we need a deeper understanding of the origins and history of where we live, as well as natural mechanisms and background behind how disasters occur. It is also imperative that we hone our senses through our daily experiences in order to develop the ability to judge things for ourselves.
- By learning the charms of an area and meeting its people, we can keep the memories of the 3.11 disasters alive and continue to share them.
- We must preserve memories of the 3.11 disasters and our subsequent realizations so that others may be more prepared for future disasters.



# Direction

# 1) Developing means for learning about natural phenomena and disasters

A place is needed for Sendai citizens and visitors alike to learn about the origins and history of the area, natural mechanisms and the memory of the disasters. Building a means of visiting disaster-stricken areas to experience the damage will help Sendai citizens to make new insights.

# 2) Human resource development

Having a connection with the people and the region while learning will deepen these new insights and our thinking to make us feel closer to the affected areas. In order to produce such connections, we will need to train storytellers that can narrate disaster memories, as well as the associated coordinators and guides.

# 3) Remembering March 11th

There needs to be an ongoing event every year on March 11th that makes Sendai citizens think of and remember their feelings from the Great East Japan Earthquake. This will deepen and expand disaster awareness in our citizens.

# 2-2 Initiative Implementation

# 2-2-1 Project Site Development

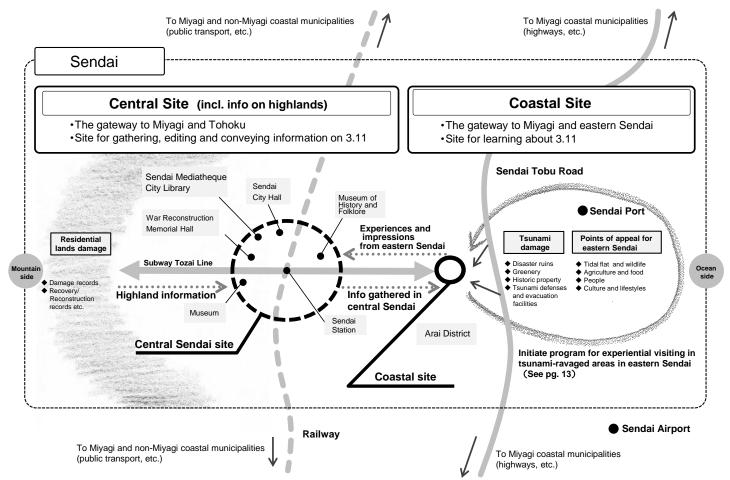
The memorial sites must organically link the initiatives described above and preserve our memories and experiences of the 3.11 disasters for the global posterity. It would be to Sendai City's advantage to utilize the respective special qualities of both the central Sendai and coastal Sendai sites in development of this project.

# (1) Sites that tell a story

- Despite their proximity, tsunami damage remains visible in coastal Sendai site in eastern Sendai whereas no damage can be seen in central Sendai. In developing the memorial sites, this contrast will be an important piece in sharing the memory of the 3.11 disasters.
- As the heart of Tohoku, the Sendai sites must serve as gateways to draw visitors to the Tohoku region and the Miyagi coast.

# (2) Roles of the central and coastal sites

- The central site will act to compile and share individual citizen experiences from the earthquake, tsunami damage and the state of residential land damage, the prolonged disabling circumstances, and all the associated emotions involved.
- The coastal site will serve as a starting point for visiting ground zero for the tsunami and touring the coast to relive the memory and experiences of the disasters.



# Required memorial site features

# **Central site**

### • Compile disaster memories and experiences

The central site will serve as the foundation for sharing memories and experiences from the 3.11 disasters. It will be important to collect both primary and secondary sources, sorting and storing them for the long-term. Here, primary sources will include pictures and paper materials depicting things before the disasters, immediately after, and in the reconstruction process. Meanwhile, secondary sources will include assorted publications, books and pamphlets. Citizen involvement in the compilation process will keep the memories fresh in their minds.

### • A place for citizens to talk about the 3.11 disasters

Each citizen must be given the chance to tell their story to keep the memories fresh in mind and share them with future generations.

# • Exhibits to show the overall picture of the Great East Japan Earthquake

Given Sendai's position as the gateway to Tohoku and the convenience of the central site, it will require exhibits showing the full story of the Great East Japan Earthquake. These exhibits will be for visitors unable to tour the coastal areas and the three Tohoku prefectures affected, as well as future Sendai citizens who did not experience the 3.11 disasters.

Alongside the damage experienced in coastal and central Sendai, the exhibits should show damage from landslides in the hills and the associated recovery process. This will be important in showing more of the residential damage in Sendai from not only the Great East Japan Earthquake, but also the 1978 Miyagi earthquake.

## Example central site archive services

- Photo, video, ruin and panel exhibits
- Compiling, storing and viewing of materials (incl. official disaster-related documents)
- Exhibit of damage in the highlands
- Exhibit showing Tohoku-wide damage
- Disaster responses and lessons from Local governments
- Multi-language support
- Online exhibits
- Stories told and compiled by Sendai citizens

# Coastal site (see pg. 13)

# Informational exhibits needed on tours of eastern Sendai

Given the massive damage from the tsunami in eastern Sendai, it will be key to get visitors to tour the areas and experience them first-hand. This will require exhibits that will give visitors a full picture of the Great East Japan Earthquake and Sendai, as well as basic information on eastern Sendai itself.

So that those impacted by the disaster will also want to visit, an exhibit will also be needed to depict pre-disaster lives, work, appeals and other details on eastern Sendai. This exhibit should include the histories of those areas in which residents were forced to relocate.

### • Building a fieldwork activity program

A fieldwork activity program will be needed to create the tour route. Tools for showing means of transportation and learning about certain elements on site will also be beneficial.

To keep people visiting eastern Sendai over the long term, it will be important to show visitors more than just the scale of tsunami damage and the recovery process. They must also be introduced to the charms of the area's people, natural environment, history, agriculture, food and local culture.

### • Injecting personal feelings into the message

More citizens need to be involved, including those from the disaster-stricken areas. They must share with the public their memories of the 3.11 disasters and feelings on the areas. Ideally, citizens who can talk about the disasters will also be trained to add a more personal connection for visitors touring eastern Sendai.

## Example coastal site archive services

- Photo, video, ruin and panel exhibits
- Structure for touring: transportation provision, tsunami evacuation information, maps, organized tours, etc.
- Site features for collecting personal feelings for inclusion in the exhibit message

# Linking the central and coastal sites

• Linking the central and coastal sites will be effective means for passing on the memory of the 3.11 disasters to the world and future generations. Some possible ideas include making resources and records collected in central Sendai available at the coastal site, or archiving records and impressions from visitors to eastern Sendai in the central site, or holding joint events combining symposiums at the central site and field visits.

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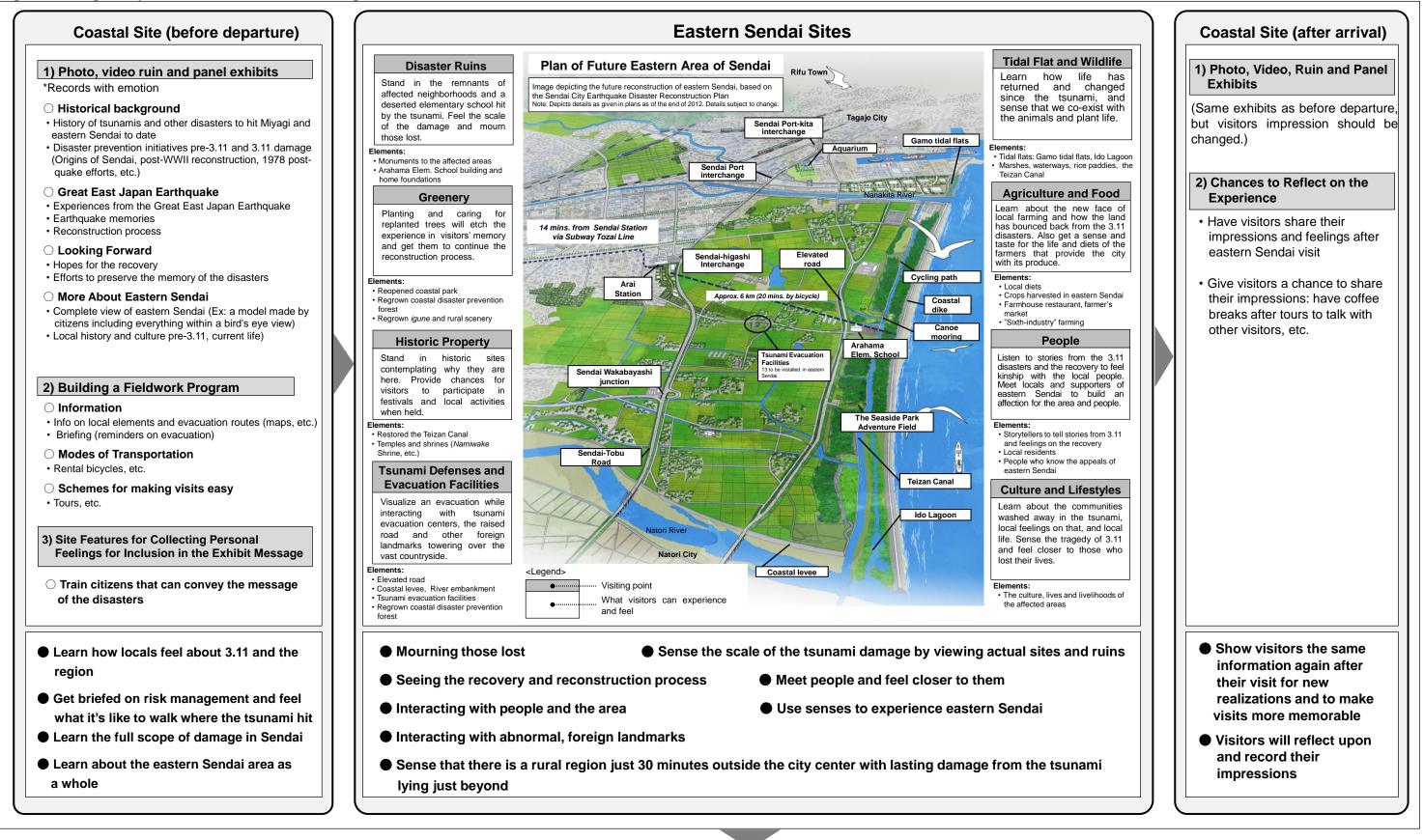
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What we want those who visit eastern Sendai to take back with them upon returning home Tell others of their experiences in eastern Sendai

- Use the experience in disaster prevention efforts at home, in the community and with organizations

- Visit again
- Keep in touch with the people and area

• Cherish their own family and area more

13

# 2-2-2 Project Implementation in Cooperation with a Newly-Established Organization

With the Earthquake Disaster Reconstruction Memorial Project, a collective effort by a core organization and various other parties will be needed in order to move the project forward.

# Background

- The memorial-related projects mentioned thus far are complex, spanning many fields and involving many implementing bodies. They are relevant to all of Sendai's citizens, including those yet to be born, and will impact the disaster preparedness of those in other regions.
- Damage levels differ from area to area, just as feelings on disaster differ from person to person. Additionally, circumstances faced by those affected in the 3.11 disasters also changes with the passing of time.

# Requirements for project advancement

# 1) Establish a core organization

In order to oversee a continuous stream of wide range of projects, Sendai City must establish the core organization for advancing the project. This organization will handle drafting and implementing policy, regular project evaluations and reflections, and active communication of project information in Japan and overseas.

# 2) Collaborate with various entities

In order to share the memories and experiences of the 3.11 disasters with a wider global audience for future generations, it will be necessary to build trust with and gather the knowledge of various entities and push the project forward as a collaborative effort.

# Considerations for project advancement

# 1) Handling message diversity and changes

It will be important to collaborate with various parties, tapping them for their collective information as projects are implemented. While the individual memories and experiences of Sendai citizens do not all fit neatly together, this will help in bringing them together and dealing with changes over time.

# 2) Devise a method for sharing the memory of the 3.11 disasters

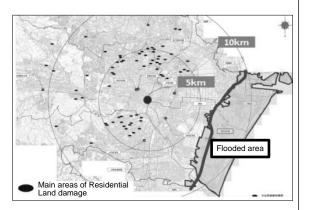
The Great East Japan Earthquake was a once-in-a-lifetime event; no one had experienced such massive and widespread damage. As such, various parties should be tapped for their knowledge in devising a means for sharing the memory of the 3.11 disasters. This means should be shared with the world for use in other regions. The methods can then be refined by exchanging knowledge and opinions with other regions and used to increase our future disaster preparedness.

# Damage from the Great East Japan Earthquake

### 1. Earthquake Overview

- Name of the Earthquake: The 2011 off the Pacific coast of Tohoku Earthquake
- Date and time: March 11, 2011, 14:46 JST
- Location of the Epicenter: Off the Sanriku coast (38.1°N / 142.5°E)
- Seismic scale: magnitude 9.0; maximum intensity 7 on the Japanese Scale (1 to 7) (northern Miyagi Pref.)
- Seismic Intensity in Sendai City: upper 6 in Miyagino Ward; lower 6 in Aoba, Wakabayashi and Izumi Wards; upper 5 in Taihaku Ward
- Height of the Tsunami: 7.2 meters in Sendai Port (estimated)
   \* Largest aftershock: Aplil 7, 2011, 23:32 JST; magnitude 7.2, off the coast of Miyagi Pref.

upper 6 in Miyagino Ward; lower 6 in Aoba and Wakabayashi Wards; upper 5 in Izumi Ward; lower 5 in Taihaku Ward



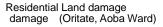
### 2. Damage in Sendai

### (1) Types of damage by region

· Damage to residential areas in highlands

Landslides, fissures, and damage to embankments and retaining walls in residential areas, etc. • Tsunami damage in eastern shore region

Human casualties, property damage, flooding in farmlands, damage to sewerage and gas facilities, etc.



Minami-Gamo Wastewater Treatment Plant (Gamo, Miyagino Ward)

Coastal tsunami (Okada, Miyagino Ward)





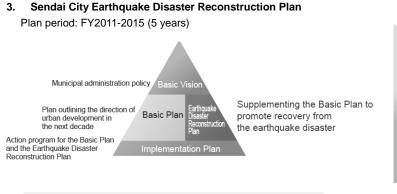


### (2) Damage Overview

- · Human casualties: 914 fatalities; 30 missing; 2,275 injured (as of June 30, 2014)
- Damage to buildings: 30,034 destroyed, 27,016 with extensive damage, 82,593 with partial damage, 116,046 with some damage as of Sept. 22, 2013)
- · Residential areas confirmed to be either "dangerous" or "requires caution": 5,728
- Tsunami inundation: 8,110 households affected (including 1,160 farming households)
  - Inundation area: Approx. 4,500 ha (including Approx. 1,800 ha of farm land)
- Cost of the damage in Sendai City: estimated at ¥1,368,400,000,000 (as of Jan. 29, 2012)

### (3) Evacuees and Recovery

- Displaced persons Maximum refugees: 105,947; maximum evacuation centers 288; evacuation center active duration: Mar. 11-Jul. 31, 2011
   Essential utilities Electricity – Peak outages: 841,000 buildings; full restoration: May 7, 2011
  - essential utilities Electricity Peak outages: 841,000 buildings; full restoration: May 7, 201
    - Water Peak outages: 230,000 buildings; full restoration: Mar. 29, 2011
    - Gas Peak outages: 359,000 buildings; full restoration: Apr. 16, 2011
- Temporary housing Prefabricated temporary housing developments: 19; Units: 1,523 (welfare temp. housing: 1 development, 18 units) Households: 12,009 (Mar. 31, 2012)
  - \*Breakdown: Prefabricated temporary housing: 1,346; leased private housing: 9,838; leased municipal housing: 825
- Disposed debris: 2.72 million tons; completed: Dec. 27, 2013



# Reconstruction projects for the one million citizen's of Sendai 1 Tsunami reduction and housing reconstruction project to "protect lives from

- a tsunami"
   2 Residential area rebuilding project to "build the foundation for safe homes"
- 3 Life recovery project to "support individual livelihoods"
- 4 Agricultural and food frontier project to "strongly revitalize agriculture"
- 5 Seaside exchange and revitalization project to "restore the beautiful coast"

### 4. Progress of Major Reconstruction Elevating Projects

### (1) Tsunami protections and housing reconstruction

• Elevated road construction(Shiogama-Watari Prefectural Road): Started March 2014, scheduled to be completed in fiscal 2018

7

- Development for 13 tsunami evacuation facilities: Sequentially started in Sept. 2014, to be completed in fiscal 2016
   Disaster-Prevention Collective Relocation Promotion Project in 13 districts: Approx. 700 lots to be completed by end of
- fiscal 2014
  Development for 3,200 Disaster reconstruction municipal housing units: Sequentially moving from fiscal 2013, to be completed in fiscal 2015

### (2) Disaster-damaged residential land recovery

Public works for residential land recovery: 169 districts to be completed by end of fiscal 2014

### (3) Resettlement

- · Resettlement: Temporary housing reduced from 12,009 households (Mar. 2012) to 7,313 (Dec. 2014)
- Resettlement Promotion Program formulated in March 2014

### (4) Farming and food frontiers

- Restoration of farmland: debris cleared in Dec. 2011; desalination work complete Apr. 2014
- Land re-cultivation: Started in fiscal 2013, to be completed in fiscal 2016

### (5) Regeneration of coastal interaction

• Seaside Park: Disaster recovery work started Nov. 2014, to be completed in fiscal 2016 (some parks in fiscal 2017)

### (6) Sendai disaster prevention model construction

- Evacuation center operational manuals: Written for each evacuation center, started from fiscal 2013
- · Sendai City Community Disaster Preparedness Leader training: 197 trained in fiscal 2013 (target: 600 leaders)
- Disaster education: Disaster prevention leaders posted in all schools in Apr. 2012
- ; supplementary readers distributed in Mar. 2013

### (7) Energy conservation and new energy

- Model eco-towns: Public recovery housing in Tago-nishi and Arai-higashi to be outfitted with energy management equipment
- Algal biomass project: Field trials started in Apr. 2013

### (8) Economic growth

· Special zones for reconstruction: 4 plans authorized for tax exceptions for 180 specified businesses

Major Disasters in Sendai				
<ul> <li>869 : Large earthquake. Tsunami kills approx. 1,000.</li> <li>1611: Large earthquake. Tsunami kills 1,783.</li> <li>1616: Large earthquake. Tsunami kills 1,783.</li> <li>1616: Large earthquake.</li> <li>1678: Large earthquake.</li> <li>1933: 1933 Sanriku Earthquake. (M 7.4)</li> <li>1910: Typhoon brings heavy rains.</li> <li>1923: Great Kanto Earthquake.</li> <li>1933: 1933 Sanriku Earthquake.</li> <li>1933: 1933 Sanriku Earthquake.</li> <li>1933: 1933 Sanriku Earthquake.</li> <li>1934: Large earthquake.</li> <li>1935: Large earthquake.</li> <li>1936: Large earthquake.</li> <li>1937: Typhoon lone damages approx. 3,000 Miyagi homes.</li> <li>1947: Typhoon lone damages approx. 3,000 Miyagi homes.</li> <li>1950: Heavy flooding from Typhoon Jane damages more than 5,000 Sendai homes.</li> <li>1978: 1978 Miyagi Earthquake (M 7.4) kills 27 in Miyagi.</li> <li>1986: Typhoon Sarah brings heavy rains, damaging approx. 5,500 homes.</li> <li>2005: Large earthquake (M 7.1)</li> <li>2005: Large earthquake (M 7.2)</li> <li>2011: Great East Japan Earthquake</li> </ul>				



- 6 Model development project for a disaster-proof Sendai to "learn from the past disasters for the future"
  - Energy-saving and new energy projects for a "sustainable energy supply"
- 8 Sendai economy development project to "improve urban vitality and the quality of life"
- 9 Exchange promotion project to "promote the features of the city and its reconstruction efforts"
- 10 Earthquake disaster memorial project to "convey the memory of the earthquake disaster to future generations"

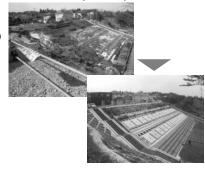
#### Resettlement site (Tago-nishi)



Disaster reconstruction municipal housing (Arai-higashi)



Public works for residential land recovery (Nankodai)



### Milestones in Recovery and Reconstruction from the Great East Japan Earthquake

2011	
03.11	Great East Japan Earthquake strikes, tsunami hits Disaster
	headquarters established, Evacuation Centers opened
	(peaking at 288 Evacuation Centers on 03.14)
03.15	Disaster volunteer centers established (until 08.10)
03.24	Collection of oversized waste from tsunami flooding begins
03.28	Construction of prefabricated temporary housing begins (Block 38, Asuto-Nagamachi)
04.01	Sendai City Basic Plan for Earthquake Disaster
00.	Reconstruction announced
04.05	Committee for Agricultural Reconstruction in Eastern
	Sendai established
04.07	Largest aftershock strikes (Seismic intensity : 6 upper)
04.11 04.22	First application period for temporary housing opens Debris removal begins in residential areas
04.22	Post-disaster Reconstruction Bureau established
05.21	Reconstruction symposium held (6 meetings through 05.29)
05.23	Applications accepted for demolition and removal of
	destroyed houses
05.30	Sendai City Earthquake Disaster Reconstruction Vision
05 21	established
05.31	Development of Disaster reconstruction municipal housing announced
06.01	Community Watch Joint Project begins for temporary
	housing Reception of personnel from local governments
	nationwide on long-term assignment mainly to
	government-designated cities begins
06.12	Opinions exchanged on reconstruction and community
06.15	building (7 meetings through 06.26) Prefabricated temporary housing complete (excl. temporary
00.15	welfare housing)
07.01	Debris removal begins in agricultural areas
07.11	Great East Japan Earthquake memorial service held
07.16	Tohoku Rokkon Festival held
07.31	All evacuation centers in Sendai City closed
08.11 08.20	EGAO Sendai recovery support station established First briefing session for community building in eastern
00.20	Sendai held (until 08.31)
08.22	Applications accepted for demolition and removal of
	Concrete walls
09.20	Sendai City Earthquake Disaster Reconstruction Plan
10.01	(draft) established Debris incineration begins with temporary incinerators
10.01	Briefing sessions start for Sendai City Earthquake Disaster
	Reconstruction Plan draft (7 meetings held through 10.16)
10.28	First issue of Reconstruction Updates newsletter issued
11.05	Briefing sessions held with tsunami flooding simulations
11 00	(through 11.06)
11.09	Briefing sessions begin for the farmland consolidation project in eastern Sendai
11.10	First issue of Mirain, disaster recovery area newsletter,
	issued
11.30	Sendai City Earthquake Disaster Reconstruction Plan
	established
12.01	Regional support center project begins
12.09 12.16	City gas supply resumed with liquefied natural gas (LNG) Disaster risk areas designated (eastern Sendai)
12.10	Briefing sessions begin for Collective Relocation for
	Disaster Prevention and residents in damaged residential
	areas
12.28	Debris removal complete (farmland)
12.28	Citizens surveyed on Disaster-Prevention Collective
	Relocation Promotion Project and other projects (through 02.05.2012)
	02.03.2012)
2012	02.03.2012)
<b>2012</b> 01.10	Consultation desk for recovery in affected residential areas
01.10	Consultation desk for recovery in affected residential areas opened
	Consultation desk for recovery in affected residential areas opened Individual counseling on Disaster-Prevention Collective
01.10	Consultation desk for recovery in affected residential areas opened Individual counseling on Disaster-Prevention Collective Relocation Promotion Project and other projects (through
01.10	Consultation desk for recovery in affected residential areas opened Individual counseling on Disaster-Prevention Collective
01.10 01.16	Consultation desk for recovery in affected residential areas opened Individual counseling on Disaster-Prevention Collective Relocation Promotion Project and other projects (through 02.05)

03.11 Memorial service for the Great East Japan Earthquak	e held in
Sendai	

- 03.23 "Moving Forward As One SENDAI -" released
- 05.28 Subsidy applications accepted for community building and reconstruction related to Disaster-Prevention Collective Relocation Promotion Project
- 06.05 Applications accepted for residential reconstruction aid for eastern Sendai
- 06.15 MLIT Ministerial approval for plan for Disaster-Prevention Collective Relocation Promotion Project (for eastern Sendai)
- 07.17 Policy for redevelopment of northern Gamo district set to advance as land readjustment project
- 09.01 Emergency broadcasting service started for seniors living alone in temporary housing
- 09.10 Disaster risk areas designated (Midorigaoka 4-chome)
- 10.10 Elevated roads project started on Shiogama-Watari Prefectural Road
- 10.30 First issue of community building and reconstruction newsletter issued
- 11.11 Applications accepted for residential land in public rezoned district in Arai
- 12.21 MLIT Ministerial approval for plan for Disaster-Prevention Collective Relocation Promotion Project (Midorigaoka 4-chome) Applications accepted for 12 units in first Disaster reconstruction municipal housing building

#### 2013

- 03.11 Memorial service for the Great East Japan Earthquake held in Sendai
- 03.11 "Activity Records from First Year after the Disasters" published
- 03.15 Disaster risk areas designated (Matsumori-Jingahara)
- 03.18 MLIT Ministerial approval for plan for Disaster-Prevention Collective Relocation Promotion Project (Matsumori-Jingahara)
- 03.19 Sendai City Regional Disaster-Prevention Plan revised (general information, earthquake and tsunami measures)
- 05.01 Information map for Sendai residential land development history made available
- 06.06 Detailed tenant application policy for Disaster reconstruction municipal housing decided
- 08.01 Support system begins for reconstruction of housing in tsunami flood areas (areas expanded)
- 09.17 Applications accepted for 661 units in 6 Disaster reconstruction municipal housing buildings
- 09.29 (Combustible) debris incineration complete
- 12.27 Debris treatment and disposal complete

### 2014

- 02.05 Support system for reconstruction of housing in tsunami Flood areas expanded (direct subsidies for repairs, etc.)
- 03.11 Memorial service for the Great East Japan Earthquake held in Sendai
- 03.15 Debris collection sites restored to original state
- 03.16 Road elevation work on Shiogama-Watari Prefectural Road begins (groundbreaking ceremony)
- 03.31 Program for Rebuilding Disaster Victims' Lives formulated Reception of personnel on long-term assignment ends.
- 04.01 System started for monetary assistance in moving into Disaster reconstruction municipal housing Plans decided for recovery land readjustment project for affected areas of northern Gamo
- 05.10 Applications accepted for land in 7 districts for Disaster Prevention Collective Relocation Promotion Project
- 07.10 Applications accepted for 2,447 units in 36 Disaster reconstruction municipal housing buildings
- 09.09 Construction of first tsunami evacuation tower begins (within planned site in No. 3 park, inland side of Sendai Port)
- 11.18 Damage recovery work begins in Seaside Park

### Sendai City Disaster Reconstruction Memorial Committee Membership

	Ayumi Takahashi	Wakatsuku Association (2013) / Secretariat staff member, Office for Promotion of the Future of Fukushima,
		Educational Affairs Section, Fukushima University (2014)
	Etsuko Takahashi	Director, Adventure Playground Sendai-Miyagi Network (NPO)
	Hironori Watanabe	Professor, Faculty of Engineering, Tohoku Institute of Technology
	Hiroshi Maniwa	President, Sendai Chamber of Commerce and Industry
0	Ikuko Miyahara	Professor, Dept. of Business and Project Planning, School of Project Design, Miyagi University
	Masako Inaba	President, Yui-net Co., Ltd.
	Masami Sato	Vice Chair, 20th Century Archive Sendai NPO
	Masashige Motoe	Associate Professor, Graduate School of Engineering, Tohoku University
0	Satoru Masuda	Professor, Graduate School of Economics and Management, Tohoku University
	Sayaka Kimura	Faculty of Liberal Arts, Tohoku Gakuin University
	(FY2013 only)	
	Seiichi Otaki	Professor, Graduate School of Economics and Management, Tohoku University
	Shigeki Abe	Economics Professor, Dept. of Co-existing Society Studies, Faculty of Economics, Tohoku Gakuin University
	Shoko Nishiotachime	Representative, Aozora Editorial Office
	Takashi Murakami	Associate Professor, Miyagi University of Education
	Yoshie Okusa	Director, FIELD AND NETWORK Inc.

O Committee Chair O Committee Vice Chair

### Framework of the Sendai City Disaster Reconstruction Memorial Committee

### I. Establishment

(Approved by Sendai Mayor, June 14, 2013)

The Sendai City Disaster Reconstruction Memorial Committee (hereinafter "Committee") will be established so that experts can exchange opinions regarding the Earthquake Disaster Memorial Project and Project for Regenerating Coastal Interaction as outlined in the Sendai City Earthquake Disaster Reconstruction Plan and reflect the outcome of this exchange in disaster reconstruction policy.

### II. Matters for Consideration

The committee will consider and discuss the following topics:

- (1) An earthquake disaster memorial project
- (2) A project for regenerating coastal interaction
- (3) Policy and measures related to the items listed in (1) and (2) above.

#### III. Organization

- . The Committee members (hereinafter "Members") will be appointed by the Mayor from among the following groups:
- (1) Academics
- (2) Others deemed appropriate by the Mayor
- 2. Member terms will be one year.

#### IV. Committee Chair and Vice Chair

- 1. The Committee will have a Chair and Vice Chair.
- 2. The Committee Chair will be elected by the Members.
- 3. The Committee Vice Chair will be appointed from among the Members by the Committee Chair.
- 4. The Committee Chair will preside over Committee affairs as the Committee representative.
- 5. The Committee Vice Chair will assist the Committee Chair and attend to the Chair's duties in the case that the Chair is involved in an accident or is indisposed.

#### V. Committee Meetings

- 1. Committee Meetings will be convened by the Committee Chair.
- 2. Committee Meetings cannot be held without a simple majority of Members present.
- 3. As necessary, the Committee Chair may request that non-Members attend Committee Meetings and ask their opinions.

### VI. General Affairs

Committee general affairs will be handled by the Post-Disaster Reconstruction Division of the Post-Disaster Reconstruction Bureau.

### VII. Other

Any items other than those defined in this framework needed for the Committee to conduct its business will be decided by the Committee Chair upon discussing with the Committee.

### Supplementary Clause

This framework is implemented as of June 14, 2013.

# Sendai City Disaster Reconstruction Memorial Committee Meetings

## Fiscal 2013

### • Meeting #1: July 2, 2013

1) The state of initiatives to date regarding the Earthquake Disaster Reconstruction Memorial

### • Meeting #2: Sept. 24, 2013

- 1) Restoring greenery in eastern Sendai
- 2) Utilizing Teizan Canal as historic property

### • Meeting #3: Nov. 5, 2013

- 1) Use of a disaster archive
- 2) Discussion of preserving disaster ruins and building monuments

\*Held at Sendai Mediatheque. Along with the committee discussions, there was a keynote speaker and panel exhibition.

### • Meeting #4: Dec. 20, 2013

- 1) Utilizing the Teizan Canal as historic property
- How 3.11 should be spent and remembered in the future \*For issue 1), the Miyagi prefectural River Dept. was invited to attend and join in the discussion.

### • Meeting #5: Feb. 3, 2014

- 1) Restoring greenery in eastern Sendai
- 2) Use of a disaster archive
- 3) UN World Conference on Risk Disaster Reduction

### • Meeting #6, Mar. 24, 2014

1) Exchange of opinions based on visit to eastern coastal region

## Fiscal 2014

### • Meeting #7: Jul. 14, 2014

- 1) This year in the committee
- 2) Basic principles for the Earthquake Disaster Reconstruction Memorial as a whole
- 3) Sites for using a disaster archive

### • Meeting #8, Aug. 26, 2014

- 1) Themes arising from committee discussions
- 2) How to make eastern Sendai tour-ready

### • Meeting #9, Nov. 18, 2014

1) Sendai City Disaster Reconstruction Memorial Committee Report (draft)

### • Meeting #10: Dec. 25, 2014

1) Sendai City Disaster Reconstruction Memorial Committee Report submitted



# Summary of Committee Meeting #3 (held at Sendai Mediatheque)

Date: 17:30-20:00, Nov. 5, 2013, Venue: Sendai Mediatheque, 1F open square,

### Keynote Speech

On Preserving Disaster Ruins: How to Share the Disaster Story Speaker: Takuro Kimura, Glocal Empowerment, Support and Aid Institute

### Summary of keynote speech:

- $\boldsymbol{\cdot}$  Report of activities from the Committee for Sharing the 3.11 Disaster Story towards preserving disaster ruins
- $\boldsymbol{\cdot}$  Introduced 4 cases illustrating the significance of preserving disaster ruins
- Effects of preserving ruins: evidence of damaged areas, reinforcing and promoting disaster risk reduction measures, and advancing local recovery
- · Presented examples of disasters nationwide
- · Issues with preservation: building local consensus, selecting the object to preserve, creating public systems, etc.

### Voices from attendees:

- "I live in an affected area, and I think we can't only talk about the pain and sadness. I want the laughter to return. I really hope we can work with the administration to build a place with feeling and hopes."
- "We need to discuss a way to pass this onto the children—work with schools and research institutions, or archive things in our school libraries."

Also featured Panel exhibition of disaster reconstruction: Sharing memories from the 3.11 disasters





Sendai City Disaster Reconstruction Memorial Committee Report: Proposal for Preserving the Memory of the Great East Japan Earthquake for Global Posterity Published December 2014

Published by: Sendai City Disaster Reconstruction Memorial Committee

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