

Study Trip Report on
SHIZUGAWA HOSPITAL AND SCHOOL BUILDINGS
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With estimates of 9.0 in moment magnitude by most of the seismological institutions, the March 11, 2011, Tohoku earthquake in northern Honshu is now placed as the fourth largest earthquake in the world since 1900 and the largest powerful earthquake to have hit Japan since modern instrumental recordings initiated more than 130 years ago. The maximum Japanese seismic intensity is 7, in which was observed in Kurihara area (northern part of Miyagi prefecture) while the strongest peak ground acceleration recorded is 2933gal (Tsukidate). According to the National Police Agency as of July 15, 2011, the estimated casualties are more than 20,000. A study trip to Miyagi Prefecture which conducted from 5 to 7 September, 2011 involved several places namely the Research Center for Prediction of Earthquakes and Volcanic Eruptions and the Laboratory of Professor Motosaka in the Tohoku University, the Sendai Government Office Building No. 3, the Ishinomaki Tax Office and the Ishinomaki Harbor Combination Building, affected and damaged areas near Onagawa town, and the evacuation center, the Shizugawa Hospital and the Shizugawa High School in Minamisanriku-Town.

This report, however, only summarizes field observation (after almost half year from its occurrence) of damaged buildings in affected Shizugawa area in Minamisanriku-Town. The building shown in Figure 1 is the Shizugawa public hospital, located in the Town of Minamisanriku, with mountains of debris in front of the building. Tsunami had attacked up to the fourth floor and many hospitalized people were killed by the waves. Some who were able to flee to the fifth floor (left-building) were survived.



Figure 1. Shizugawa Hospital

Takeshi Kanno, a 31-year-old doctor, never thought that he would save lives in his line of work as many at one time as he did on March 11. He, being on duty when he heard the tsunami alert, immediately began moving patients to the highest floor, helping dozens of people in the short window between the 9.0 magnitude quake and the deadly wave. When the wall of water arrived, Kanno watched it swallow the street in three minutes, taking the patients he couldn't move with it. "We went downstairs, and everyone was gone," he says. Over the next two days, Kanno refused to leave those he had helped survive. When evacuation helicopter arrived, he waited until the last of his patients had gone before he left, too. Three days after the quake, he at last made himself back to his wife, just hours before the birth of their second child, a boy named Rei. The name evokes two meanings, a beam of light in English and the

wisdom to overcome hardship in Chinese and Japanese. He is now one of the 100 world's most influential people tallied up by the TIME (Time100, Vol. 177, No 17|2011). The following figures show some buildings near the Shizugawa hospital.



Figure 2. Some buildings near the Shizugawa hospital.

There were more than 300 aged people who fled up to the fifth floor of the building marked with A. Later, these people survived and were rescued by a helicopter. The area covered by a lot of debris (marked with B) was once a place where a group of students played before the deadly wave arrived. These students then fled to an apartment (building marked with C), trying to climb up to the top of the building but only 12 from them were survived. Behind the building marked with E was a police station (marked with D) where one policeman was killed. He was ordered by the superintendent to stay since he was on duty, while the remaining policemen were asked to evacuate. A railway line near to this police station was broken but there was no casualties reported because no train running during this time. This place was heavily affected, and had remained isolated when all communication means were broken down. Those people who survived were rescued by helicopters.



Figure 3. Disaster Management Center

Figure 3 shows the damaged disaster management center office. Mayor Katsunobu Sakurai, 55, ordered about 50 of his staff members to stay here in this building to make announcement of the upcoming tsunami. He thought that the embankment would protect them from tsunami but unfortunately, the tsunami was so huge that it reached until the top of the building. Some of them who held the rail with their back facing the wave were safe but those with position facing the wave were washed away by this

powerful tsunami. It is believed that many people were killed in this area in which two of them were still making announcement to the public to flee from tsunami, until their last breath. This building is suggested to be preserved as monument. However, some of those who relate to the victims don't want to preserve here.



Figure 4. Locations of the elementary and junior high schools, respectively. (from right to left)

Figure 4 shows the locations of the elementary and the junior high-schools (from right to left) which located in hills area, served as an evacuation places following the tsunami. As an example that can be learned, it must be principal to construct public facilities on the higher portion because those structure will be used for shelters, especially to the locations that prone to natural disasters. Similarly the buildings facing the sea should be a high rise building so that it can be used as a shelter when tsunami strikes. As Roger Bourke White Jr. in his anatomy of memorable disaster says, 'A memorable disaster isn't closely related to the magnitude of losses or the victims, either. It is the survivors that make disasters memorable.' One of the survivors, Mr. Goto who shared his experience during our visit to an evacuation center in Minamisanriku-Town really gave a big impression on us about how powerful a nature can be, regardless of how well a nation is prepared or how high the technology of the countermeasures in place to mitigate the impact of disasters. Disaster does not care about borders and can affect any place. On behalf of the people in Japan that received assistance from all over the world, he appreciated it. He trusted that the whole world is actually connected and helpful towards hardships.

The March 11 earthquake and the subsequent tsunami that rushed towards and devastated the shores of Honshu Island in Japan, however, would have been a substantially larger disaster than it already was, were it not for the well functioning warning systems on the Japanese islands. Awareness on the importance of good disaster risk management should be raised in all countries and countermeasures in mitigating the impact of disaster should be taken, considering both financial and political aspects of respective countries.