Report on Site Visit to Japan (19-25 October 2008)

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Contents

Background

Collaboration project on monitoring methods of archeological monuments have been carried out between National Research Institute for Cultural Properties, Tokyo (NRICPT), Japan and Borobudur Heritage Conservation Office (BHCO), Indonesia. The collaboration aims to share and exchange knowledge, expertise and experience of monitoring methods of monuments.

Schedule of Visit

Visit to Japan was carried out from 19 October to 25 October 2008 with the detailed schedule as desribed in the following table.

Date	Activity
Sunday, 19 October, 2008	Departure from Yogyakarta, Indonesia
Monday, 20 October, 2008	Welcoming meeting at NRICPT
Tuesday, 21 October, 2008	Site visit: Fugoppe Cave site
Wednesday, 22 October, 2008	Site visit: Temiya Cave site
Thursday, 23 October, 2008	Site visit: Nikko Shrines and Temples
Friday, 24 October, 2008	Study Meeting

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Date	Activity
Saturday, 25 October, 2008	Departure from Narita, Japan

Fugoppe Cave

The Fugoppe Cave Site in Yoichi town, located in near Otaru, Hokkaido, was found in 1950 and designated as National Monument in 1953. The opening of the cave about 5 m height, 7m width, and 6m depth. The geology of Maruyama Hill including the cave is composed of Miocene tuffaceous sandstones, which are soft and porous. See Figure 1.

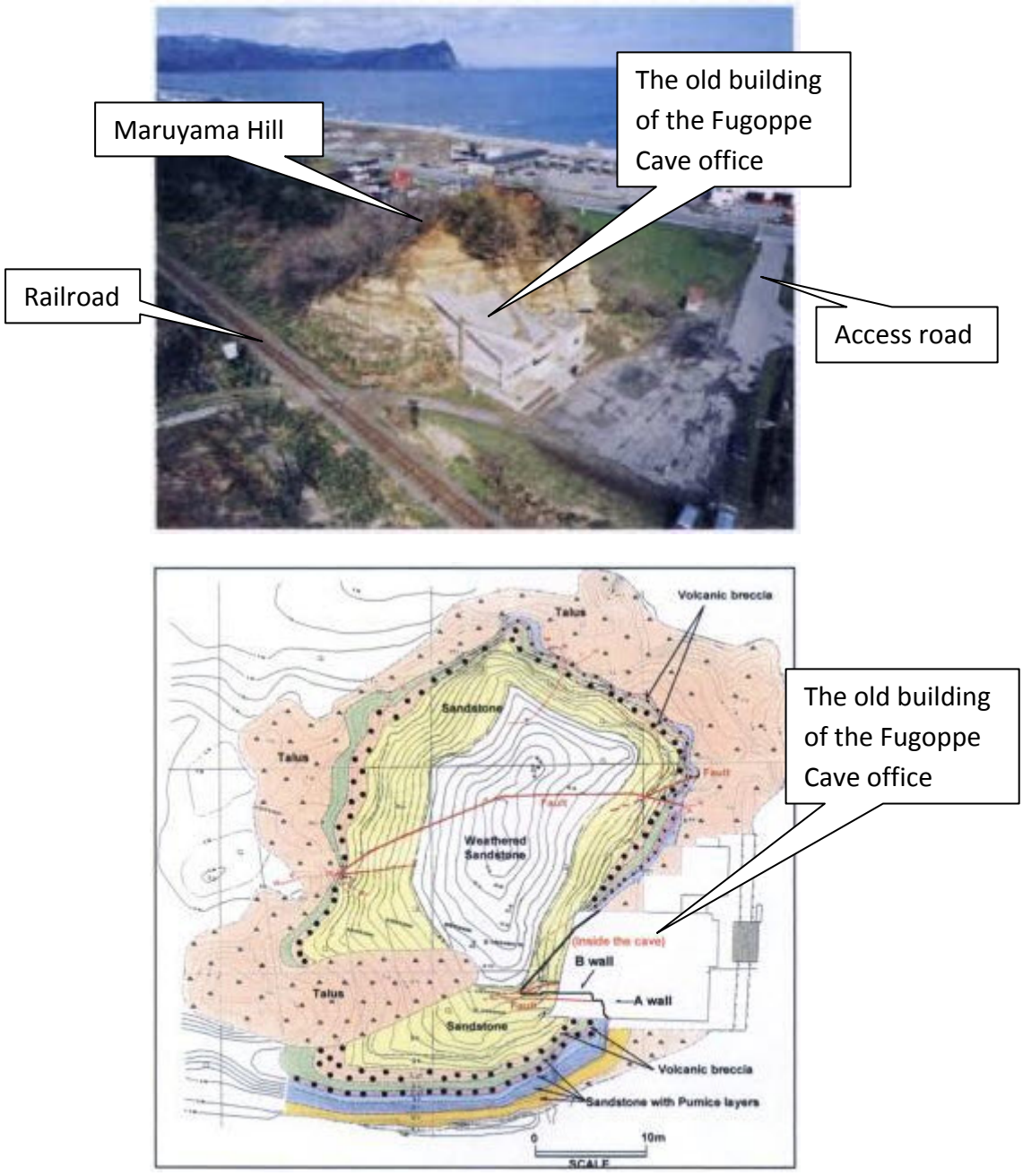

Figure 1. Maruyamas Hill: Aerial View and Geologic Map[2]

[2] Preservation from Rockfall of the Engraved Wall in the Fugoppe Cave, Hokkaido, Japan by Tadashi Yasuda, Hiromitsu Yamagishi, and Hideji Kobayashi

Visitors to the Fugoppe cave cannot see the original opening from the surrounding. The Fugoppe office was built in front of the cave (see Figure 2). The office served the purpose for (1) protecting the cave from the detrimental effect of visitors and weather, (2) for giving information to visitors, (3) the place for monitoring equipments. The office itself has been renovated several times.

Figure 2. The old and new office building of the Fugoppe Cave
(http://www.amateras.com/trip/japan/hokkaido/otaru-e.htm)

The walls are covered by 2,000 years old engravings showing mostly human figures. Some of them have wings and look like angels. They belongs to the history of Post-Jomon Period, about 1500 years ago. (See Figure 3).

The Fugoppe cave was equipped with sophisticated monitoring devices, such as, humidity, temperatur, wall crack, groundwater drainage tunnel, and several other devices. The monitoring devices are connected to the computer, so the data acquisition are quite automated. Previously the cave had problem from the algae (green organism) that grew on the wall. Some research has been done, and now the growth of the algae are stable. The growth of the algae can be stabilized using the minimum exposure of light to the cave wall. The strict monitoring on the growth of the algae was carried out all day long not only using the aformention online computer but also by inspection of the officer in charge of the Fugoppe cave.

Figure 3. The reproduction (above) and the original painting on the cave wall
(Photo Courtesy of Yoichi Town Board of Education, Hokkaido)

Temiya Cave

Temiya cave situated at the foot of small hill and also very close to the highway (see Figure 5). This cave is the first cave in Japan that has been designed and monitored with very sophisticated monitoring devices. The office equipped with very interesting video information for visitors. This information is not found in the latter developed cave office, the Fugoppe's. The monitoring devices are less sophisticated than the devices installed at Fugoppe office. At Temiya office, the daily monitoring is still recorded automatically with the roll paper; not directly connected to the computer chip. Even with the old fashioned monitoring equipments, as seen at Tamiya Cave, it is quite expensive, and it is difficult to be be adopted to other less develop countries.

Temiya Cave is only a small remains of a cave, which is of great archaeological interest. It contains cave carvings and Inkoku paintings from the Zoku-Joumon period of Ainu history, about 400 AD (see Figure 5).

Figure 4. Temiya Cave Office
(http://www.amateras.com/trip/japan/hokkaido/otaru-e.htm)

Figure 5. The reproduction (above) and orginal (below) Temiya Cave painting
(Photo Courtesy of Yoichi Town Board of Education, Hokkaido)

Nikko Shrines and Temples (World Heritage site)

Nikko Shrines and Temples of Mount Nikko, a sacred site from the seventh century. The site consisting of a group of 103 heritage buildings and the woods which enclose them. The Nikko Toshogu Temple and the Taiyuin Reibyo are situated at the apex of the mausoleum of the remains of Tokugawa Ieyasu.

The area of the Nikko site is tremendous, the site visit was carried out for less than 3 hours, therefore a complete picture of the Nikko site cannot be described in the report. All the pictures given in the following paragraphs mostly taken from the internet site of Nikko City (http://www.city.nikko.lg.jp/kankou/shaji/english/main.htm).

The Ishidorii

The Ishidorii has remained in its original form since its construction in 1618. The torii gate, which is 9.2 m tall and 13.2 m wide, is made out of 15 blocks of stone, instead of wood, which is the material usually used for torii (see Figure 6).

The Okusha Hoto

The Okusha Hoto was originally a wooden building when first constructed in 1622, but was remodeled into a stone structure in 1641. The bronze pagoda, which we see now, is a 1683 reconstruction, built after an earthquake destroyed the stone building (see Figure 7).

The Honden

The Honden was originally constructed in 1619 as the main hall of Futarasan-jinja. It was relocated from its original location to the present location when a couple of accompanying halls were added in 1645. Though some replacement of materials has been done for maintenance purposes involving roofing, painting and decorative metal fittings, no changes have been made as far as structural members are concerned (see Figure 8).

Figure 6. The Ishidorii, a torii gate, constructed from stones
(http://www.city.nikko.lg.jp/kankou/shaji/english/main.htm)

Figure 7. The Okusha Hoto, bronze pagoda, is a 1683 reconstruction
(http://www.city.nikko.lg.jp/kankou/shaji/english/main.htm)

Figure 8. The Honden, the main hall of Futarasan-jinja
(mainly constructed from wood)
(http://www.city.nikko.lg.jp/kankou/shaji/english/main.htm)

One of the famous gate found in the site are the Nikko gate, which is highly ornamental with very bright coloring style (Figure 9). This style of ornaments as well as its bright coloring was found all over the place. Like any other ornaments found in the sites, there are story attached to the related ornament. One famous ornament is depicted by three monkeys closing their ears, mouth, and eyes to deliver the famous old teaching "Hear no evil, speak no evil, see no evil" (see Figure 10).

Figure 9. Nikko Gate
(http://upload.wikimedia.org/wikipedia/en/3/3d/Gate-nikko-japan.jpg)

Figure 10. Hear no evil, speak no evil, see no evil (Toshogu)
(http://upload.wikimedia.org/wikipedia/commons/6/60/Hear_speak_see_no_evil_Toshogu.jpg)

Comments Fugoppe and Temiya Caves

For foreigner, especially from tropical country (that has milder weather), such as Indonesia there are several aspect of the monitoring worth to mention:

- Due to weather and some physical considerations, both caves are surrounded by the modern building to accomodate all the neccessary monitoring and protection scenarios, therefore the originality of the cave opening cannot be found anymore by visitors. In the future, it might be important to take the balanced consideration between preserving the originality of the cave opening (conservation aspect) and the protection/monitoring of the caves. In Indonesia, for comparison, there are many caves that has the prehistorical paintings. Some of the found in Maros and Pangkep areas. In this case, the opposite situation happened. The cave is still in the original state, but the monitoring and protection aspect a bit more difficult to carry out (see Figure 11).
- Both caves are equipped with very sophisticated equipments. Since Temiya Office was build before the Fugoppe Office, the later tend to better equipped than the first. The modern equipments used in both caves, usually difficult to be adopted to the case of cave monitoring in other countries, due to the fund and the daily maintenance.

Figure 11. Prehistorical caves in Maros and Pangkep, South Sulawesi
(documentation of the Borobudur Heritage Conservation Office, Indonesia)

Comments Nikko Shrines and Temples

Since Indonesia has also several World Heritage Site/Monuments), especially The Borobudur Temples, some aspect the site management worth to mention:

- Nikko World Heritage Site has a good management. Visitors to the site are guided in order minimize the negative impacts.
- The have weather monitoring devices in the site, but also installed several environmental monitoring devices (especially, CO) not only in the Nikko site but also at several places in the Nikko City area.

- The sorrounding community of the Nikko site is very supportive to the World Heritage Site. The have committee that supervised the site, and even has volunteers to help the site to monitor the quality of the air. The volunteers have to monitor the aforementioned environmental devices.
- Since most monuments and building are made of wood, therefore the management of the Nikko site focus on monitoring and preserving each wooden structure. During the visit, one of the wooden monument was renovated.
- In the future, the management of the Nikko site, complementary to the maintenance of the wooden structures, the stone structures must also be included in the maintenance pratices.
- During the visit to the Hokusa Hoto (see Figure 7), it was found that the interlocking between two stone blocks was replaced by bronze lock. Due to the oxidation between metal (bronze) and the sorrounding air, the bronze lock was deteriorated. In this case, it much better to use stone to make the lock. At Borobudur World Heritage Site, this kind of lock is always used, since it is more natural to the surrounding stone blocks (see Figure 12).

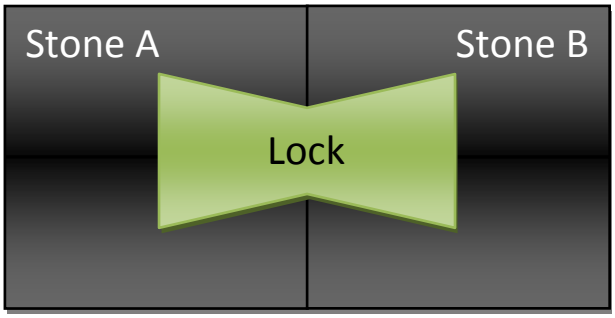

Figure 12. Lock mechanism between two different stone blocks

Acknoledgements

This visit has been made possible from the collaboration between the NRICPT Japan and The BHCO, Indonesia.

References

All the figures presented in the report were taken from the internet. Some of the URLs used in the report were as follows:

- http://www.amateras.com/trip/japan/hokkaido/otaru-e.htm
- http://www.showcaves.com/english/jp/caves/Fugoppe.html
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