

## NEWS ON RECENT CONFERENCE

### 4th Central Asian Geotechnical Symposium, Samarkand, Uzbekistan

Reported by

Dr. Zokhir Khasanov,  
General Secretary of Uzbekistan Geotechnical Society, Samarkand, Uzbekistan

The 4th Central Asian Geotechnical Symposium took place in the President Hotel of the historical silk-road city of Samarkand, Uzbekistan, from September 21st to 22nd, 2012, followed by a two-day (23 and 24 September, 2012) technical tour to another historical city of Bukhara (Uzbekistan). This event was made possible by the sponsorship of the Uzbekistan Geotechnical Society and GFP Co. LTD (Uzbekistan) and under the auspices of TC301 (Preservation of Historic Sites) and ATC19 (Conservation of Cultural Heritage and Historical Sites) of ISSMGE. It attracted about 100 participants from 14 countries and 64 papers were presented. Table-1 Participants with countries. The distribution of participants based on their nationalities is Uzbekistan 24, Russia 18, Japan 17, Kazakhstan 9, Iran 4, USA 4, Iraq 2, 8 Tajikistan 2, Algeria 1, France 1, Italy 1, Portugal 1, South Korea 1, and UAE 1.



The symposium theme of "Geo-Engineering for Construction and Conservation of Cultural Heritage and Historical Sites - Challenges and Solutions -" is recently attracting heavy concerns from the engineering discipline. Samarkand was inscribed as World Heritage in 2001 by UNESCO as Cross Road of Cultures.

The Symposium consisted of oral and poster presentations related with the next topics:

1. Regional Characterization of Soils and Foundation, and Geo-Construction
2. Adobe, Tomb, and Earthen Structures, Historical Sites, and Conservation of Cultural Heritage
3. Regional and Traditional Characteristics of Foundation and Structures
4. Mosque, Minaret, Towers, Citadel, Castles, Stone Masonry, and Heritage Structures
5. Ancient Caves, Underground Construction, Tunneling, Transportation, and Infrastructures
6. Ancient and Historical Dam, Embankment, and Ancient Highways
7. Soil Dynamics and Geotechnical Earthquake Engineering
8. Ancient, Traditional, and Present Soil Improvements
9. Damages from Salting and Frost including Geoenvironmental Engineering
10. Traditional and Innovative Technologies for Geotechnical Applications

The work of the symposium was dedicated to geotechnical problems of investigations on durability of architecture and cultural heritage sites, causes of deformation associated with problematic geological and geotechnical conditions, weathering earthen structures above ground, and underground structures as well.

Geotechnical exhibitions were shown for soil testing and instrumentation.

The first day of the symposium was initiated by the Opening Ceremony in which the Chair of Uzbekistan Geotechnical Society, Prof. Askar Khasanov, took the leading role. After that, the floor was given to Prof. Y. Iwasaki, the Co-Chairman of TC301 and Chairman of ATC19, and Prof. J.-L. Briaud, the President of ISSMGE, made a Welcome Address, followed by Prof. A. Zhussupbekov, the VP of ISSMGE for Asia, who opened officially "Year of Geotechnical Engineering for Conservation of Culture Heritage and Historical Buildings in Asian Region."

## NEWS ON RECENT CONFERENCE (Continued)

### 4th Central Asian Geotechnical Symposium, Samarkand, Uzbekistan

The Keynote Lectures were delivered by

- J.-L. Briaud (USA): The Washington Monument Case History,
- Y. Iwasaki (Japan): The Measurements of Temperature and Humidity in Ancient Tomb in Dahshur, Egypt
- V.M. Ulitsky, A.G. Shashkin, K.G. Shashkin, and M.B. Lisyuk (Russia): Preservation and Reconstruction of Historical Monuments with Provisions for Soil-Structure Interaction analyses
- K. Watanabe and R. Vatandoust (Japan): Earthen Heritages Should Be Passed on to the Future
- I. Towhata, T. Sasaki, and Y. Taguchi (Japan): Behavior of Sandy Soils during the 2011 Gigantic Earthquake in Japan
- E. Tuncer (USA): Load Transfer Platform for Column-Supported Embankment

After the conference, a technical tour was organized to visit the ancient city Bukhara.

Japanese Delegation (17 participants) of ATC 19 and Board of Uzbekistan Geotechnical Society (10 participants) had a special technical session related with geotechnical discussion about possibility of joint investigations of historical buildings as those in Samarkand, Bukhara, Khiva, Kokand and other historical cities of Uzbekistan.

In the Closing Ceremony, Prof. Yoshinori Iwasaki invited participants of 4th CAGS to join the Workshop by ATC19 - Role of Geotechnical Engineering for Conservation of World Heritage in Asia, which will be held in Paris during the 18th International Conference on Soil Mechanics and Geotechnical Engineering in September 2013.

Prof. EC Shin (Korean Geotechnical Society) introduced Seoul as the candidate for the next venue of 19th ISSMGE conference in 2017 in South Korea. Several photographs were taken during the conference.



Photo 1 Group photograph of participants

## NEWS ON RECENT CONFERENCE (Continued)

### 4th Central Asian Geotechnical Symposium, Samarkand, Uzbekistan



Photo 2 Prof. Khasanov delivering his welcome address



Photo 3 Key Note Address presented by Prof. Watanabe “Earthen Heritage should be passed on to the Future”

## NEWS ON RECENT CONFERENCE (Continued)

### 4th Central Asian Geotechnical Symposium, Samarkand, Uzbekistan



Photo 4 Friendship during banquet



Photo 5 Dancing Prof. Askar Zhussupbekov from Kazakhstan



## NEWS ON RECENT CONFERENCE (Continued)

### 4th Central Asian Geotechnical Symposium, Samarkand, Uzbekistan



Photo 6 Dancing Prof. Askar Khasanov from Uzbekistan



Photo 7 Technical tour in the Mausoleum of Timur in Samarkand

## NEWS ON RECENT CONFERENCE (Continued)

### 4th Central Asian Geotechnical Symposium, Samarkand, Uzbekistan



Photo 8 Big wall of Bukhara Fortress



Photo 9 Uzbekistan's greatest minaret, the Minorai Kalon, in Bukhara that was constructed during the period of the Kara-khanid Dynasty in the 12th Century



## NEWS ON RECENT CONFERENCE (Continued)

### 4th Central Asian Geotechnical Symposium, Samarkand, Uzbekistan



Photo 10 Chor Bakr Necropolis near Bhukara



Photo 11 Irrigation canal

## NEWS ON RECENT CONFERENCE (Continued)

### 4th Central Asian Geotechnical Symposium, Samarkand, Uzbekistan

#### My Impression on 4th Central Asian Geotechnical Symposium in Samarkand

By Yoshinori Iwasaki, Co-Chairman of TC301 and Chairman of ATC19

It was in Alexandria October, 2009, during the 17th ICSMGE when Askar Zhussupbekov told me that Uzbekistan Society has an intention to have the next central Asian Conference in Samarkand. After the establishment of ATC19 (Asian Technical Committee on Conservation of Cultural Heritage and Historical Sites), Askar, as the Vice President in Asian Region, added a day for ATC groups during the 18th Asian Regional Symposium in Hong Kong. I organized the Symposium of ATC19 during the Hong Kong Conference where Prof. Askar Khasanov, the president of Uzbekistan Society, and his son, Zokhir, joined the symposium. The Samarkand Symposium was planned as a joint activity with ATC19. Since then Dr. Zokhir worked very hard as the Secretary of the Symposium to lead to the successful symposium with the great support from the Vice President Askar Zhussupbekov.

I planned to organize a tour group from Japan to the Symposium. The group consisted of 14 members of ATC19. We were recommended by several sources to take land transportation between Tashkent International Airport and Samarkand because the domestic flight between Tashkent and Samarkand was not reliable. However, it was also revealed that train ticket was difficult to obtain from overseas. I asked an Uzbekistan person, who was introduced through Japan-Uzbek Friendship Association, was staying in Japan and was working for an Uzbek tour company to arrange the domestic tour with a guide in Japanese language as well as to visit the Department of Japanese Language in a Foreign Language School in Samarkand.



Fig. 1 Electric train “Afrasiab” on the left runs at 250 km/hour



## NEWS ON RECENT CONFERENCE (Continued)

### 4th Central Asian Geotechnical Symposium, Samarkand, Uzbekistan



Fig. 2 A luxurious compartment of “Sharq” express (on the right of Fig. 1) from Tashkent to Samarkand

When we arrived at the Tashkent airport, the tour guide, Ms. Firuza Isroilova, was waiting for us outside the airport building. Firuza spoke good and perfect Japanese. She took care of us from the arrival at the airport through the whole period of the Symposium to the very end of the departure from the Tashkent. We took a ride on a train for three hours from Tashkent to Samarkand. It was quite comfortable as compared with air flight. We were able to enjoy the wide space in the deluxe sheet with the same price as air flight. The only thing that I felt some inconvenient was to walk down and up in the underpass tunnel to reach the departure platform. If an escalator and/or elevator had been available, the train trip might be much easier and more pleasant.

#### Symposium as the start of Year of Geotechnical Engineering for Conservation of Cultural Heritage

Symposium began at 10:00 AM on September 21st in the Conference Hall of the President Hotel with about 100 participants from 14 countries. The Vice President of ISSMGE for Asian Region, Prof. Askar Zhussupbekov, proposed and declared the start of *the Year of Geotechnical Engineering for Conservation of Cultural Heritage and Historical Sites*, commemorating the Symposium in Samarkand as the crossing point of Eastern and Western Cultures. The President of ISSMGE, Prof. Jean-Louis Briaud, attended and delivered an interesting case history of remediation of foundation of the Washington Monument Tower that was constructed in 1867.

The Conference Hall was half circle in shape as shown in Fig.3 and was good for the audience to see the screen at a short distance. The key note lecture on the restoration work for several earthen structures in central Asia was delivered by Prof. Watanabe under the title of “Earthen Heritages should be passed on to the Future.” He has been studying characteristics of earthen structures at Ajina Tepa in Tajikistan as well as at Chogha Zanbile and Bam in Iran. He presented the decaying process of earthen structures by crystallizations of chemical salt that was produced by evaporation of water from the surface of an earthen structure. He further showed the remediation method by covering the surface of a structure with thick soil layer to prevent the damage of the existing surface from salting damage. The total number of presented papers was 40 in English and 20 in Russian languages. Simultaneous translation was provided during the symposium. President Briaud expressed his impression of the conference by saying “I deeply enjoyed and was impressed by such presentations of creative research of friction angle under zero gravity by Prof. I. Towhata and development of a simple yet useful field test of needle penetrometer by Mr. M. Yoshimura.”

## NEWS ON RECENT CONFERENCE (Continued)

### 4th Central Asian Geotechnical Symposium, Samarkand, Uzbekistan



Fig. 3 Lecture by Prof. J-L. Briaud in the Conference Hall of the President Hotel, Samarkand

#### The best arrangement of the Academic and City tour

Since Samarkand is the crossing Road of Cultures, the city is full of heritage structures and sites to visit. The two-day symposium was so arranged as the combination of symposium in the room until early afternoon and technical visit or sightseeing in the late afternoon before dinner. A post-symposium technical visit was an overnight visit to an ancient city of Bukhara. In Bukhara, we visited the Ark fortress that was originally constructed around 5th century AD on a natural hill of loess ground. The wall is of around 20 m in height and the retaining wall was reinforced by horizontal wooden logs.

## NEWS ON RECENT CONFERENCE (Continued)

### 4th Central Asian Geotechnical Symposium, Samarkand, Uzbekistan



Fig. 4 Kalyan Mosque, Bukhara

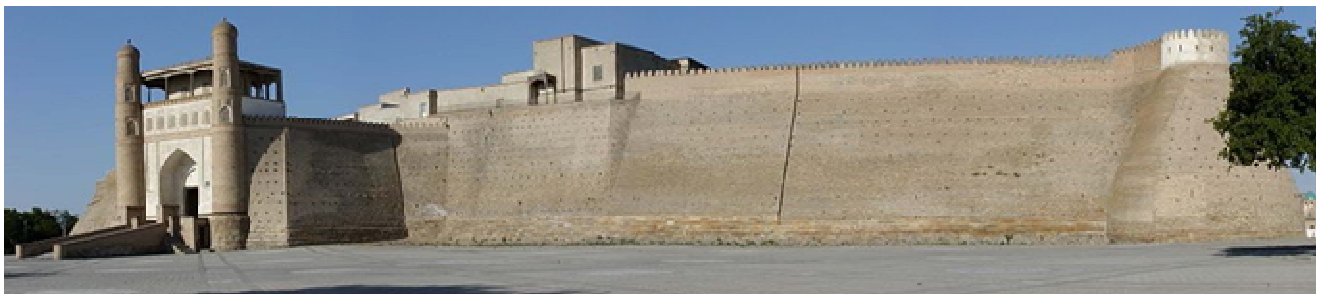


Fig. 5 Fortress of Bukhara



## NEWS ON RECENT CONFERENCE (Continued)

### 4th Central Asian Geotechnical Symposium, Samarkand, Uzbekistan



Fig. 6 Retaining wall was reinforced by horizontal wooden logs



Fig. 7 Hotel Asia with Askar and Zokhir who designed piled raft foundation

#### Ishrat-Khana (Mausoleum of Delight) Mausoleum

On September 26, Prof. A. Khasanov brought us to the Ishrat-Khana Mausoleum, where Habiba Sultan, a wife of the Timurid Sultan Ahmed Mirza, constructed the domed building for Princess Havend Sultan-bika, a daughter of the ruler Abu Said in 1464. The building was beautifully decorated; the name was given as Mausoleum of Delight. Today the structure has been deteriorated. The central dome and drum finally collapsed after successive earthquakes in 1903. Prof. Askar Khasanov is working on the conservation of this monument.

**NEWS ON RECENT CONFERENCE (Continued)**

**4th Central Asian Geotechnical Symposium, Samarkand, Uzbekistan**



Fig. 8 Remains of Ishrat-Khana (Mausoleum of Delight)

## NEWS ON RECENT CONFERENCE (Continued)

### 4th Central Asian Geotechnical Symposium, Samarkand, Uzbekistan

#### Paper Mill in Samarkand

In ancient times, Samarkand was famous for production of high-quality paper. We visited the Koni Ghil MEROS Paper Mill, where water wheeler works as energy to tamp skin of mulberry. We took lunch under a cozy tent and enjoyed green land in Samarkand.



Fig. 9 In Koni Ghil MEROS Paper Mill

#### Navoi Opera Ballet Theater, Tashkent

On April 26, 1966 at 05:22 local time, an earthquake of magnitude 5.0 took place in Tashkent. 10 were killed, 1,000 were injured, and about 100,000 were left homeless. 28,000 buildings were destroyed, including 200 hospitals and clinics, and 180 schools, in the Old Quarter of Tashkent, the principal damage area. Thousands of old one-story adobe dwellings were flattened. Additional damage was caused by hundreds of aftershocks that followed. However, the Navoi Theater that was constructed by Japanese citizen was safe and did not collapse.



## NEWS ON RECENT CONFERENCE (Continued)

4th Central Asian Geotechnical Symposium, Samarkand,  
Uzbekistan

Fig. 10 Message devoted to Japanese citizens who constructed Alishor Navoi Theater in Tashkent from 1945 to 1946

## NEWS ON RECENT CONFERENCE (Continued)

### 4th Central Asian Geotechnical Symposium, Samarkand, Uzbekistan



Fig. 11 In front of Navoi Theater, Tashkent