

Brief Report on Academic Research Visit to Dhaka and Chittagong in August 2012

Date: 15th ~ 20th August, 2012

1. Academic Research visit Overview

(1) Purpose:

New academic project on urban disaster mitigation “Sotsusai” (in Japanese language) with totally innovative approach, has recently been initiated in Japan, and it is now high time to launch international level collaboration with new philosophy. In this context, it is prime time to collaboratively holding a seminar with counterparts in Dhaka, as one of the first steps to establish “Sotsusai” academic network internationally, regarding “Urban Regeneration and Fire Disaster Mitigation” in the third week of August 2012.

Furthermore, kind guidance regarding fires at airport, department store and slum areas, would play an important role in enhancing the fire safety in both countries, especially from the viewpoint of urban building fire disaster mitigation with respect to effective update of building codes and standards.

(2) Members:

- Prof. Shinichi Sugahara, Director of Center for Fire Science and Technology, (TUS), Japan.
- Mr. Yuki N. Karakawa, Visiting Researcher, Tokyo University of Science (TUS), Japan.
- Mr. Md. Shaidul Alam Chowdhury, Master’s course student, Tokyo University of Science (TUS), Japan; Fire Officer, Fire Service and Civil Defence (FSCD), Bangladesh.
- Dr. Sanjib Barua, Academic faculty, American International University-Bangladesh (AIUB).
- Dr. Hideki Yoshioka, Senior Researcher, National Institute for Land and Infrastructure Management (NILIM), Japan.
- Mr. Tatsuo Ando, Engineer, Mitsubishi Plastics Inc., Japan.

(3) Schedule Activities:

Date	Items	Location
15 Aug 2012	Travel	Tokyo(Narita) → Singapore → Dhaka
16 Aug 2012	Sotsusai Seminar	Dhaka: Waste Concern
17 Aug 2012	Travel, Fire Investigation	Dhaka → Chittagong Chittagong (fires) : Ctg. airport, School, Department store
18 Aug 2012	Meeting, Fire Investigation, Travel	Chittagong Medical College Chittagong (fire): Bou-bazar slum Chittagong → Dhaka
19 Aug 2012	Site survey Meeting Travel	Dhaka: Bamboo construction sites Ruposhi Bangla Dhaka→ Singapore → Tokyo(Narita) (20 Aug 2012)

2. Activities:

(1) Sotsusai Seminar at Waste Concern Group, in the city of Dhaka

Despite local Ramadan season when most local Muslim people usually focus on celebrating religious rituals instead of performing daily jobs, unimaginably many people gathered at Waste Concern in the Banani district of Dhaka city, primarily for exchanging academic views on “Urban Regeneration and Fire Disaster Mitigation”. From Japan side, presentations performed are as follows. “Sotsusai” : Innovation Initiative to Aftermath Fire Safety Strategy, kindly from Respected Prof. Sugahara Sir of TUS; “Resilience and capability building for sustainable Civil Defense with global and Japan case.” from Mr. Yuki N. Karakawa; “Urban Building Fire Disaster Mitigation with Respect to Legal Viewpoint of Combustible Façade Design” from respected Dr. Hideki Yoshioka; and “International Design for Fire-preventive Sandwich Panels with Urban Context” from Mr. Tatsuo Ando. From Bangladesh side, it was most honour of all the participants that the whole seminar itself was kindly presided by Hon’ble VC Prof. A. M. M Safiullah Sir of AUST, supported by Dr. Sanjib Barua of AIUB. Also, respected Director Major Motiur Rahman sir of FSCD kindly joined there to actively exchange views with respected participants from Japan. More than those, presentations on introduction of Waste Concern organization where this seminar was held, brief view on regeneration plan of densely inhabited area in Dhaka, were well performed also. Last but not least, participant from Mistubishi international branch office in Singapore also actively joined this seminar with passionate comments and exchange of information and friendship with other participants and ambitious local students.



Picture- 1 SOSAI Seminar at Waste Concern Group, in the city of Dhaka.

(2) Site survey in Chittagong (Fires at airport, school, department store, and slum area):

• Fire at Chittagong Airport:

On 1 March 2012, there happened a fire at Chittagong airport disrupting domestic and international flight operation. The fire originated from an electric panel adjacent to the elevator on the first floor of the terminal building (Pic.2). It took time for the firefighters to clear the smoke trapped in the building as the building was airtight. Ten fire fighting units from three fire stations worked with the air force and navy personnel to douse the fire. Passengers and airport and airline staff were asked to clear the building immediately after the fire broke out, which created panic amongst the crowds. In the end, there reported no casualties due to this fire, which means that evacuation guidance and fire-fighting operation was successful at least, but from the viewpoint of smoke control and ventilation system, there is some room for improvement.



Picture- 2 Place of fire origin at Ctg. Airport.

Picture-3 Int'l check-in counter at Ctg. Airport.

• Fire at UCEP School Chittagong:

On 16 March 2012, Ucep-run school and ten shanties in slum were gutted in a fire at near railway colony on Ice-Factory road in Chittagong. The fire had originated from a clay stove of a shanty at around 9:00pm and soon engulfed the other shanties (Pic. 4) and an adjacent school (Pic. 5). Nine fire fighting units rushed to the spot and doused the fire. Fire-spread paths within slum and from- slum-to-school are important phenomena from the viewpoint of mitigation of urban fire spread based on compartmentation, and further detailed discussion based on this survey will be performed in the near future for proposing simple and affordable solutions.



Picture-4 Place of fire origin in slum area adjacent to UCEP school.



Picture-5 Playground and fire-affected buildings of UCEP school.

• **Fire at Bhai Bhai Department Store:**

On 13 January 2012, the fire originated from an electric short circuit at a department store on the ground floor of the four-storey building (Pic.6) at about 2:45am. A CNG-run microbus caught fire inside the building's garage next to Bhai Bhai Department Store (Pic.7). As is often the case with buildings in cities of Bangladesh, the main gate on the ground floor and the door to the roof of this building were closed, which is a critical situation in case of evacuation. This building fire was simple but very informative from the viewpoint of basic education of fire safety to ordinary citizens.

The cause of death (five persons) living on the top-floor was inhalation of thick smoke that spread fast to the top floor. On the other hand, two persons living on the same top-floor, successfully escaped the fire as they climbed down the building from the balcony using a piece of a cloth.

All nine members of the first floor climbed down through the adjoining tin-roof of another department store beside the garage. Six family members of the second floor came down to our balcony using a piece of cloth and then got down to the street. As understood from this safe evacuation of many residents on both first and second floors of this building, an open balcony is a very effective plan for safe evacuation, hopefully better with proper fire compartment (both horizontal and vertical) within the building. Also, it is essential to properly educate ordinary citizens living in this type of middle-rise buildings that shutting the fire-door and using the open balcony for evacuation-path is the safe way for survival.



Picture-6 Façade-view of Bhai Bhai dep't store.



Picture-7 Garage on Ground floor in which fire started on microbus.



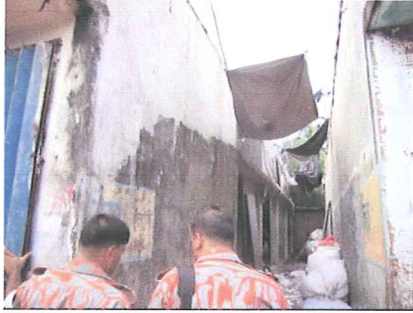
Picture-8 At balcony on the Second floor.



Picture-9 Sole staircase without vertical compartment.

• **Fire at Bou-bazar slum:**

Prior to fire spread simulation regarding this slum area, intensive measurement of length was collaboratively performed, both at fire-originated area and fire-spread area. It is important to estimate how the possible renovation of this area could contribute to decrease of speed of fire spreading at this densely inhabited area.



Picture-9 Length measurement of fire-originated area



Picture-9 Length measurement of fire-spread area

(3) Other notable meeting/site-survey:

At Chittagong Medical College, Prof. Tahmina Banu and the visiting team intensively exchanged academic views on fire disaster mitigation at hospital and agreed to continue the exchange of academic information. Meanwhile in Dhaka, visiting team performed the site survey on bamboo construction sites with respect to fire disaster mitigation from simple and affordable solution.



Picture-10 Chittagong Medical College



Picture-11 Bamboo construction in Dhaka

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