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BUET-Japan Institute of  
Disaster Prevention &  
Urban Safety (BUET-JIDPUS)



# NEWSLETTER

Newsletter of BUET-Japan Institute of  
Disaster Prevention & Urban Safety (BUET-JIDPUS)



## Training Course on “Fundamentals of Earthquake Resistant Building Design”.

Institute of Disaster Prevention and Urban Safety (BUET-JIDPUS) offered a training course for civil engineers on “Fundamentals of Earthquake Resistant Building Design” from February 26-28,

2015. This was a three days long course focusing on topics varying from engineering seismology to structural design to computational models.

## Seminar on “Strategy for Mitigation and Early Warning of Rain-Induced Slope Failure”.

BUET-JIDPUS organized a seminar titled "Strategy for Mitigation and Early Warning of Rain-Induced Slope Failure" on March 4, 2015 at the Lecture Hall of BUET-JIDPUS building. The speaker was the well-known Professor Dr. Ikuo Towhata from Department of Civil Engineering, University of Tokyo, Japan. Dr. A.M.M. Safiullah, the former Vice Chancellor of BUET was present at the seminar.



## Training Course on “Remote Sensing and GIS for Natural Hazard Assessment”.



A Training Course on “Remote Sensing and GIS for Natural Hazard Assessment” was held at BUET-JIDPUS from March 7 to April 1, 2015. The certificate awarding ceremony of this course took place on April 5, 2015 at

6.30pm at the Lecture Hall of BUET-JIDPUS. Honourable Vice Chancellor Prof. Khaleda Ekram graced the program as chief guest. Deans of different faculties of BUET also attended the program as special guests.

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**Mr. Md. Aminul Islam represents BUET-JIDPUS at the Disaster Response Exercise and Exchange (DREE 2015) organized by Bangladesh Armed Forces and US Army Pacific in Dhaka.**



Md. Aminul Islam, Lecturer of this institute participated in the Disaster Response Exercise and Exchange DREE 2015 from 30 August - 3 September jointly organized by Bangladesh Armed Forces Division and the United States Army Pacific. This five days program comprised of Table Top

Exercise & Field Training Exercise on four important issues of disaster management; command and control, urban search and rescue techniques and practice, engineering assessment capacity, and debris management.

**Earthquake Drill organized by BUET-JIDPUS**

BUET-Japan Institute of Disaster Prevention and Urban Safety (BUET-JIDPUS) organized an Earthquake Drill at BUET campus at 12.40pm on 21 December, 2015. The Drill area was limited to the Architecture, Urban and Regional Planning, Central Library and ARI-ITN building premises. Bangladesh National Disaster Management

Council headed by the Honorable Prime Minister, in a meeting on 6 May 2015, took the decision that Earthquake drill should be arranged in every Govt./Private educational Institution at least twice every year. To implement this decision for BUET, under the directive of the Vice Chancellor, BUET-JIDPUS took the initiative to organize the drill.

## Earthquake Drill at BUET

12:40PM, Monday, 21<sup>st</sup> DECEMBER, 2015  
 DRILL AREA LIMITED TO: ARCHITECTURE, URP, CENTRAL LIBRARY & ARI-ITN BUILDINGS

**WHY THIS DRILL?**  
 To Create Preparedness & Improve Response  
 Bangladesh National Disaster Management Council headed by the Hon'ble Prime Minister decided that Earthquake Drills should be organized in all Educational institutions at least 2 times annually.

**Phase I: Alarm**



Continuous siren/bell to indicate the earthquake duration.

**Phase II: Response**



**DROPI! COVER! HOLD ON!**

If there is no table in the room take shelter in a corner of the room near column. If you are in the ground floor immediately rush outdoors at a safe distance from the building.

**Phase III: Evacuation**



After the alarm stops evacuate. Don't run, walk fast. Put something over your head to protect it. Don't carry heavy bags.

**Phase IV: Assembly**



Assemble at the predetermined assembly point at a safe distance from the buildings. Count people & report missing.

**Phase V: Rescue & First Aid**



The search & rescue team will be activated. The injured will be given first aid.

Organized By: BUET - Japan Institute of Disaster Prevention & Urban Safety (BUET-JIDPUS) Under the directive of Vice-Chancellor, BUET

Assisted By: BANGLADESH FIRE SERVICE AND CIVIL DEFENCE

Volunteered By: Safety Movement Club, BUET



## **“Rapid Response Training for Earthquake” for more than 100 students, teachers, and staff of BUET.**

BUET-JIDPUS organized training on “Rapid Response Drill for Earthquake” on 8 December 2015 at 4.30pm, jointly with FSCD. A total of 105 nominated teachers, students and officers from various departments of BUET participated in this three hours long training held at the seminar room (1st Floor) of Civil Engineering building. Major A.K.M.

Shakil Nawaz, Director (Operations and Maintenance), FSCD gave a presentation and showed some ways to minimize the damage and losses of life from fire hazards and earthquake. FSCD officers also showed some rescue methods and the technique of using fire extinguisher.



## **Seminar on “Mechanisms of liquefied flow and non-liquefied slide of loose fill slopes and design implications”.**

BUET-JIDPUS organized a seminar on "Mechanisms of liquefied flow and non-liquefied slide of loose fill slopes and design implications" on 13 December 2015, 4.00pm at Lecture Hall of BUET-JIDPUS Building. The speaker was Professor Charles W.W. Ng, Chair Professor in the Department of Civil and Environmental Engineering at the Hong Kong University of Science and Technology. Dr. A.M.M. Safiullah, the former Vice-Chancellor of BUET was in the seminar.



## **Training Program on “Structural Vulnerability Assessment and Structural Health Monitoring”**



A day long Training Program on “Structural Vulnerability Assessment and Structural Health Monitoring” was held on 26 December 2015 at BUET-Japan Institute of Disaster Prevention & Urban Safety (BUET-JIDPUS), organized by BUET-JIDPUS in association with University of British Columbia (UBC), Okanagan, Canada. The training program was attended by 44 participants, including

students and faculty members from different government and non-government organization. Honorable Vice-Chancellor of BUET, Prof. Khaleda Ekram, spent some time at the training program. The training program ended with a discussion session and certificate awarding. Prof. Ahsanul Kabir distributed the certificates among the participants.

## Training on “Shake Table, Actuator and EMV Operation and Maintenance” at BUET-JIDPUS by Mr. Doug Weller.



BUET-JIDPUS had installed Shake Table last year (February, 2016) and now providing testing facilities and performing research work in this field.

A training program on "Shake Table, Actuator and Eccentric Mass Vibrator (EMV) Operation and Maintenance" was held at BUET-JIDPUS on Jan. 28-30, 2016. In this training the focused area was, operation, maintenance and analysis of the obtained data from shake table, actuator and EMV.

## Seminar on “Experimental and Field Assessment Studies on Disaster Risk”.



A seminar on “Experimental and Field Assessment Studies on Disaster Risk” was held on 2nd May 2016 at BUET-JIDPUS, organized by BUET-JIDPUS. The Chief Guest of the seminar was Prof. Dr. Jamilur Reza Choudhury, Vice-Chancellor, University of Asia Pacific and the Special Guest was Prof. Dr. A.M.M. Safiullah, Vice-Chancellor, Ahsanullah University of Science & Technology. Amod Gujral, Managing Director Encardio-rite Electronic Pvt. Ltd., Lucknow, India was one of the presenters of the seminar who presented on "Instrumentation for online web-based monitoring for safety of structures and landslide areas". The training program ended with an interactive discussion session.

## Research Collaboration (MoU signed) with University of Trieste, Italy

A Memorandum of Understanding (MoU) had been signed between BUET-JIDPUS and Department of Mathematics and Geosciences, University of Trieste, Italy on November 2014. Trieste is the centre of many research facilities, with which the University is connected. Under this MoU both parties agree on setting up long-term cooperation aimed at earthquake and tsunami hazard assessment, based on the development and

application of advanced geophysical and seismological methods for neo-deterministic zonation, with special emphasis to their application to Bangladesh. They also agreed to foster further cooperation in the field of seismic source generation and propagation processes, with special emphasis on the properties of seismic energy release, seismic sources and stress pattern in Bangladesh and surrounding regions.

## Training Program on “Seismology and Seismic Hazard Assessment”



A day long Training Program on “Seismology and Seismic Hazard Assessment” was held on 16 February 2017 at BUET-Japan Institute of Disaster Prevention & Urban Safety (BUET-JIDPUS), organized by BUET-JIDPUS in association with University of Trieste, Italy. The training program was attended by 32 participants, including students and faculty

members from different universities and representatives (engineers) from different organizations. Dr. Md. Mazharul Haque, Professor, Department of Civil Engineering, and Dean, Faculty of Civil Engineering, spent some time at the training program. Prof. Dr. Raquib Ahsan, Director of BUET-JIDPUS distributed the certificates among the participants.

## A Training Program on “Use of PLAXIS Software on Geotechnical Problem”.

A Training Program on “Use of PLAXIS Software on Geotechnical Problem” was held on 23rd January, 2017 at BUET-JIDPUS, organized by BUET-JIDPUS. Engr. Sheikh Muhammad Ferdous, Chartered Professional Civil



Engineer (CEng), Institution of Engineer (ICE), UK was the trainer of the program. There were total 20 participants including Professor, Lecturer, M.Sc student of BUET.



### Cone Penetration Test at Padma Bridge Site

BUET-JIDPUS team performed a Cone Penetration Test (CPTu) at Zajira point of Padma Bridge site. CPTu is a worldwide used test to determine the geotechnical engineering properties of soil. Soil type and subsurface soil layering along with the pore water pressure can be inferred from this test measurements.

### GPR test at Osmani International Airport, Sylhet

BUET-JIDPUS team performed Ground Penetrating Radar (GPR) test at runway of Osmani International Airport, Sylhet during 29-31 October, 2014. The three kilometer long runway of Osmani International Airport was surveyed with Ground Penetrating Radar antenna. It will provide the subsurface image and any object, void, crack. Along with BUET-JIDPUS team, Dr. Hasib Mohammed Ahsan and Dr. Moazzem Hossain, Professor, Department of Civil Engineering, BUET were also present during the test.

### Director, BUET-JIDPUS presents a paper at 10th General Assembly of Asian Seismological Commission

Dr. Tahmeed M. Al Hussaini, Director (May 2013-February 2017), BUET-JIDPUS presented a paper at the “10th General Assembly of Asian Seismological Commission” held in Manila, Philippines on November 17-20, 2014. He along with Dr. Raju Sarkar (India) submitted a proposal for formation of a working group to promote interaction between seismologists and earthquake engineers.

### Stakeholder Meeting on “Web-based Landslide Early Warning System”.

A stake holder meeting on web-GIS based early warning system for Chittagong Metropolitan area had been held on 25 September, 2014. Md. Shahinoor Rahman, Assistant Professor, BUET-JIDPUS presented objectives and outcomes of the research project. After presentation, Chittagong Development Authority (CDA) Chairman Mr. Abdus Salam delivered his valuable comments on the project. Professor Dr. Tahmeed M. Al-Hussaini and Dr. Mir Matin, Demand coordinator of ICIMOD and others had been participated in detail discussion on the project outcome.

### BUET-JIDPUS project team receives ICT Mountain Development Award 2015

The project team of BUET-Japan Institute of Disaster Prevention and Urban Safety (BUET-JIDPUS) has been awarded the “ICT for Mountain Development Award-2015” from the International Centre for Integrated Mountain Development (ICIMOD), Nepal for the project- “DEVELOPING DYNAMIC WEB-GIS BASED EARLY WARNING SYSTEM FOR THE COMMUNITIES AT LANDSLIDE RISKS IN CHITTAGONG METROPOLITAN AREA, BANGLADESH” (<http://www.icimod.org/?q=20601>). Vice-Chancellor of BUET, Prof. Saiful Islam accepted the award on behalf of BUET-JIDPUS on Dec.4 2016 during Bangladesh- ICIMOD Partnership Day.

In addition to developing a dynamic web-based early warning system (<http://www.landslidebd.com>), the project (July 2014 to Sept.2015) produced a series of technical reports on landslide inventory, social vulnerability assessment, soil investigation, community vulnerability, rainfall pattern, land cover modeling, landslide susceptibility modeling, slope stability mapping. The project also arranged several key informant discussions, meeting with CDA officials,

knowledge sharing programs, social and community awareness building programs, and a final national seminar to disseminate scientific results for relevant policy formulation. Prof. Ikuo Towhata from University of Tokyo, Japan, and advisor to the project visited landslide prone areas in March 2015 in Chittagong and contributed to

knowledge sharing programs in Chittagong and Dhaka. The final seminar held at BUET-JIDPUS in Sept. 2015 was attended by senior officials and academicians from Chittagong and Dhaka. The project was well-received and appreciated by the distinguished participants.



## Winner of the

# ICT for Mountain Development Award 2015

that recognizes the innovative use and application of information and communication technology for mountain development and conservation.

**BUET-Japan Institute of Disaster Prevention and Urban Safety project team**

for work on

'Early landslide warning system for the communities in the Chittagong Metropolitan Area, Bangladesh'

awarded on International Mountain Day

11 December 2015

**David Molden**  
Director General  
ICIMOD

**Sushil Pandey**  
ICT for Development  
KMC, ICIMOD

**Anja Rasmussen**  
Senior Manager, KM and Communication  
ICIMOD

### Grant Agreement between ICIMOD and BUET-JIDPUS

A Grant Agreement had been signed between International Centre for Integrated Mountain Development (ICIMOD) and BUET-Japan Institute of Disaster Prevention and Urban Safety for the research project titled "Web-based Landslide Early Warning System for the Chittagong Metropolitan Area (CMA)" on the occasion of kick-off workshop held on 7-9 July 2014, in Kathmandu, Nepal.



### Keynote Presentation at EMK SAFE Safety Workshop on Urban Disaster Response; Lesson from Rana Plaza Collapse

A two days workshop on urban disaster management with a focus on lessons learnt from Rana Plaza collapse relief effort was held on 23-24 August 2013, organized by SAFE and EM. Professor Dr. Tahmeed M. Al-Hussaini, Director of BUET-JIDPUS delivered keynote on the occasion. He emphasized on the projected alarming scenario of building damage due to severe earthquake in this region. Post disaster management in our country is weak, he also added. Therefore focuses should be given on disaster preparedness and mitigation effort and safe construction as well as post disaster management, he concludes.



### Director, BUET-JIDPUS presents keynote lecture at ICSECM 2013 in Kandy, Sri Lanka

Prof. Dr. Tahmeed M. Al-Hussaini presented keynote lecture on "Base Isolation for Seismic Protection of Structures with Particular Reference to Spherical Sliding Isolation System" at 4th international conference on structural engineering and construction management (ICSECM 2013) held at Earl's Regency Hotel, Kandy, Sri Lanka during December 13-15, 2013.

### Md. Shahinoor Rahman receives advanced training on Remote Sensing and GIS for Natural Hazard Assessment at ITC, the Netherlands

Md. Shahinoor Rahman, Lecturer of BUET-JIDPUS successfully completed a 9 weeks short course on Remote Sensing and GIS for Natural Hazard Assessment from Faculty of Geo-information Science and Earth Observation, University of Twente, Netherlands. He was awarded Netherlands Fellowship (NFP) for this short course.

### Crack detection and measurement of a garment factory in Rajendrapur

An investigation team visited a garment factory in Rajendrapur, Bangladesh for crack identification and crack depth measurement. Ultrasonic Pulse Velocity measuring device was used in this purpose. Also Ferroskan was used to identify the rebar location of columns.

### Vibration Monitoring at Garments Factory in Savar EPZ

BUET-JIDPUS conducted vibration monitoring of the garments factory in Savar EPZ in 30 May, 2013. It was 2 hours long monitoring, one hour with full operation of machines of the factory and one hour when all machines in rest mode.

### Seminar on "Extremes under Future Climate and Their Implications".

BUET-Japan Institute of Disaster Prevention & Urban Safety (BUET-JIDPUS) organized a seminar on "Extremes under Future Climate and Their Implications" on 21 August 2016 at 4.30 P.M. The seminar presentation was given by Dr Monirul Mirza, Adjunct Professor, Department of Physical and Environmental Sciences, University of Toronto at Scarborough, Canada. The presentation dealt with extremes under future climate and difficulties to predict extreme climatic events in long time-scales as well as implications of non-stationarity on infrastructure design. Prof. Dr. Saiful Islam, Vice-Chancellor, BUET graced the occasion as the Chief Guest. He appreciated BUET-JIDPUS for organizing the seminar on a topic of national importance and shared his experience on flooding extremes in Dhaka city.



## On-going Events

### Assessment of Seismic Exposure, Building & Socioeconomic Exposure Assessment and Contingency Planning For Ward 14 of Mymensingh Municipality

BUET-JIDPUS is conducting the above titled project funded by UNDP at ward 14 of Mymensingh Municipality. Because of the unabated growth of human settlement and others economic activities, the earthquake risk of the Mymensingh Municipality is growing with every passing moment. Rapid urbanization, sub-standard construction of structure, residential buildings and others infrastructures are the major causes behind this earthquake risk. Considering the earthquake threat of ward 14 of Mymensingh Municipality, the scopes of this project are, (i) Assessment of Seismic Exposure (ii) Assessment of Building Condition (iii) Assessment of Socio-economic Context. The assessments as mentioned above are to be superimposed and should be the basis in developing a vulnerability map with appropriate ranking of cluster under ward 14. Community participation and awareness will help for the formulation of contingency plan for ward no. 14.



## Shake Table Testing of Earthquake Resistant Concrete Frames

BUET-JIDPUS and Bangladesh Network Office for Urban Safety (BNUS), BUET is conducting a research project on Shake Table Testing of Earthquake Resistant Building Frame using Buckling Restrained Brace (BRB). Buckling Restrained Brace (BRB) can play an important role as a retrofitting technique. The main objective of this project is to investigate the effectiveness of BRB.



## Shake Table and Actuator Testing of Columns



BUET-JIDPUS is conducting a research project in association with Military Institute of Science and Technology (MIST). The primary objective of this research is to investigate the seismic behavior of hybrid concrete column reinforced with different configuration of smart longitudinal reinforcing materials under quasi static cyclic loading test. The study focuses on further expanding the investigation to compare their performance with that of non-hybrid square reinforced concrete control columns in terms of force-displacement relationship, cyclic behavior, curvature and displacement ductility, energy dissipation capacity, residual displacement and residual drift vs maximum column drift.

## International Conference on Disaster Risk Mitigation 2017 (ICDRM 2017)

BUET-JIDPUS in association with the Civil Engineering Department, BUET is organizing the 1st international conference of this institute titled "International Conference on Disaster Risk Mitigation 2017 (ICDRM 2017)". The Conference is going to be organized on September 23-24, 2017 at BUET under HEQEP Sub-Project CP-3140 of University Grants Commission Bangladesh with funding from World Bank. Main focus of the conference is on the application of engineering and technology for disaster risk assessment and mitigation. Social and policy aspects for the implementation of the mitigation procedures are also welcome.

## Upcoming Events

**ICDRM 2017**

*International Conference on*  
**Disaster Risk Mitigation**  
23-24 September, 2017  
DHAKA, BANGLADESH

Organized by  
BUET-Japan Institute of Disaster Prevention & Urban Safety (BUET-JIDPUS) &  
Department of Civil Engineering,  
Bangladesh University of Engineering & Technology (BUET)

**Important Dates**

- Deadline for abstract submission : 02 August, 2017
- Abstract acceptance notification : 12 August, 2017
- Full paper submission deadline : 05 September, 2017
- Full paper acceptance notification : 12 September, 2017

**TOPICS**

- Earthquake hazards
- Risk factors & risk mitigation
- Earthquake resistant structures
- Concrete bridge assessment strategies
- Education, Disasters & Commercial
- Disaster recovery and GIS applications
- Urban planning, design and land use
- Emergency response, rescue and relief
- Environmental impacts for infrastructure
- Integrated disaster risk assessment and sustainable development planning
- Rehabilitation and mitigation of at-risk of earthquake, tsunami, flood, & storm surge structures

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