Academic

Purpose and Scope

Bangladesh is prone to natural and man-made disasters. Our cities are becoming more and more vulnerable to variety of hazards.The main area of concern of this institute is earthquake. Other man-made or natural disaster e.g. Building Collapse, Land Slide, Urban Fire, Cyclone, Storm, Tornado etc. are also the areas of concern of this institute.

Education

This newly built institute is preparing to start academic activities soon in full phase. Research works broadly focus on hazard assessment, risk reduction, disaster management and urban safety of Bangladesh. The institute is also preparing to offer post graduate education in the form of masters of science/ masters of engineering (M.Sc./M.Engg) and post graduate diploma (PGD) in the fields of disaster engineering/technology and safety management.

Training and Conference

The institute aims to conduct training and short courses to build the capacity of target groups for effective disaster management and ensuring urban safety. For the last few years, regular trainings and yearly conference have been some of the major academic activities of BUET-JIDPUS.



Conference arranged by BUET-JIDPUS

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Testing and Consultancy Services:

BUET-JIDPUS provides different testing and consultancy services e.g.

- Dynamic testing of soil and building structures
- Dynamic property determination of soil and structures (buildings and bridges)
- Earthquake vulnerability assessment of structures
- Seismic and socio-economic exposure assessment

Rapid Response Training for Earthquake and Earthquake Drill

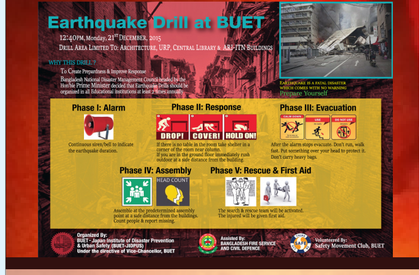
BUET-JIDPUS with assistance of BFSCD organized Rapid Response Training for Earthquake for more than 100 students, teachers and staff of BUET on 8 December, 2015.

An Earthquake Drill was organized at BUET campus on 21 December, 2015. The Drill area was limited to the Architecture, Urban and Regional Planning, Central Library and ARI-ITN building premises.













Contact

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BROCHURE

BUET-Japan Institute of Disaster Prevention and Urban Safety

(BUET-JIDPUS)

West Palashi Campus

Bangladesh University of Engineering and Technology (BUET)

Introduction

The BUET-Japan Institute of Disaster Prevention and Urban Safety (BUET-JIDPUS) was established by the Syndicate of BUET on 30 December, 2009 as a development project of the Government of Bangladesh with the financial support form the Government of Japan. The purpose of the institute is to provide a platform for teaching, learning and research in the field of disaster prevention and urban safety that will contribute to reduce disaster risk of the country. The aim of this institute is to assist the government of Bangladesh to strengthen and maintain the infrastructures all over the country and to prevent and well manage natural disasters.

The administration and management of the institute is vested on a Board of governors (BOG) having the Vice-Chancellor as the Chairman. Research and Academic Committee (RAC) consisting the Director, all Professors, Associate Professors and Assistant Professors and other members as described in the rules and regulation of BUET-JIDPUS has the responsibility of monitoring the academic, research and training programs.

List of Directors

- Prof Dr. Mehedi Ahmed Ansary (01 July, 2009 to 02 August, 2011)
- Prof. Dr. Munaz Ahmed Noor (03 August, 2011 to 03 May, 2013)
- Prof. Dr. Tahmeed M-Al Hussaini (04 August, 2013 to 10 February, 2017)
- Prof. Dr. Raquib Ahsan (11 February, 2017 to Present)

Message of the Vice-Chancellor



Bangladesh University of Engineering and Technology (BUET) has been producing quality Engineers through high quality teaching in different engineering fields. The University has been nurturing innovative minds through modern methods of teaching, exchange of knowledge and wide range of research initiatives. Research is vital for joining the global knowledge society and growing knowledge regards state of the art technology. With this target, BUET-Japan Institute of Disaster Prevention and Urban Safety (BUET-JIDPUS) was established in July 1, 2011. BUET-JIDPUS focuses on fulfilling the urgent need for active research in the field of disaster prevention and urban safety in Bangladesh. Due to geographic location and rapidly growing densely populated urban areas, disaster management and urban safety have become very important for Bangladesh. In order to address this challenge, BUET-JIDPUS aims at strengthening the capacity of professionals in the field of disaster risk reduction with particular emphasis on seismic and urban hazards, infrastructure management and structural health monitoring. We look forward to building a disaster resilient country and achieving the goal of sustainable cities and communities.

Message of the Director



BUET-JIDPUS being a new institute of BUET may still be unknown to many people. I am glad that this first prospectus of BUET-JIDPUS is being published with a view to informing students, academics, professionals, government and non-government agencies, international organizations and all readers in general, regarding the vision, missions, activities, services and capacities of the institute. We hope this prospectus will be able to show the uniqueness of this institute in this country. The main strength of the institute is the sophisticated laboratories through which advanced research can be performed in the field of earthquake engineering. However, the composition and focus of the institute is multi-disciplinary in nature where people from diverse background can contribute in disaster management and urban safety related issues. Within the short span of time, since its establishment, BUET-JIDPUS has undertaken a number of research programs. One of such programs has been acknowledged by an award of excellence. BUET-JIDPUS regularly holds training programs and workshops on advanced topics of disaster management and urban safety. Its activities are regularly reported through newsletters. We aspire that this unique institute will serve as a research institute of the highest standard and serve the country through innovations while upholding the great traditions of BUET.

Our Mission

- To strengthen the capacity of professionals in the field of disaster risk reduction, infrastructure management and structural health monitoring
- To strengthen other local agencies on the above mentioned fields through training
- To promote disaster reduction by disseminating information and knowledge
- To promote collaboration with other national and international universities & research organizations
- To conduct research, testing and consultancy services.

Non-Destructive Testing Laboratory

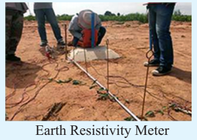
For assessment of existing condition of structure, the following non-destructive testing instruments are very useful.



Ferroscan


GPR


Ultrasonic Pulse Velocity


Earth Resistivity Meter


Schmidt Hammer


Microtremor Test


Core Cutter

Testing Capabilities and Services:

- Detection of buried utilities
- Metallic and non-metalic targets in concrete structure
- Detection and positioning of reinforcement in slab, beam and column
- Detection of foundation thickness and reinforcement in foundation
- Dynamic properties determination of soil and structure
- Crack depth determination in slab, beam and column
- Building's condition/vulnerability assessment & retrofitting
- Assessment of Seismic Exposure
- Concrete strength determination
- Seismic microzonation
- Structural health monitoring

Computational and Simulation Laboratory

With 32 computers, multimedia facilities and broad band internet and networking, we have the following server version software for education, research and professional services.



Description of Software:

ArcGIS is a geographic information system (GIS) for working with maps and geographic information. It is used for: creating and using maps; compiling geographic data; analyzing mapped information; sharing and discovering geographic information; using maps and geographic information in a range of applications and managing geographic information in a database.

ETABS is an engineering software product that caters to multi-story building analysis and design. Modeling tools, code-based load prescriptions, analysis methods and solution techniques, all coordinate with the grid-like geometry unique to this class of structure.

KaleidaGraph is a thoughtfully designed graphing and data analysis application for research scientists, as well as for those in business and engineering fields.

Mathematica is a symbolic mathematical computation program, sometimes called a computer algebra program, used in many scientific, engineering, mathematical and computing fields.

MATLAB is a high-performance language for technical computing. It integrates computation, visualization, and programming in an easy-to-use environment where problems and solutions are expressed in familiar mathematical notation.

Origin is a proprietary computer program for interactive scientific graphing and data analysis. It is produced by OriginLab Corporation and runs on Microsoft Windows.

PLAXIS 2D and 3D are powerful and user friendly finite element package intended for two/three dimensional analysis of deformation and stability in geotechnical engineering and rock mechanics. It is extensively used in civil and geotechnical engineering industry.

RADAN is a powerful post-processing software program that provides high-level data processing capabilities for GSSI GPR hardware.

SAP2000 is a general-purpose civil-engineering software ideal for the analysis and design of any type of structural system. SAP2000 is the ideal software tool for users of any experience level, designing any structural system.

SCPT Bundle is an easy and detailed software package for the interpretation of Cone Penetration Test (CPT) data. All interpreted results can be tabulated and analytic reports for every level of interpretation can be generated in this software.



Earthquake Engineering Laboratory

This dynamic testing lab having approximately 1200 sft floor area, have most sophisticated dynamic testing facilities of structure and soil. The facilities of this lab are- L-shaped ReactionWall, 18 ft high Reaction Frame, Strong Floor, Overhanging 10 ton crane facility and 25 ft high free space. The following instruments are useful to simulate earthquake and to determine dynamic properties of structure and soil.


Shake table (3mx3m)


Actuator


Reaction frame & reaction wall


Control Room


Eccentric Mass Vibrator

Testing Facilities

Shake Table: 1.6g acceleration with 10 ton payload with 25 tons hydraulic actuator.
Actuator: one 50 ton; one 30 ton and two 5 ton.
Accelerometer: one 1000mV/g, two 500mV/g, two 100mV/g

Testing Capabilities and Servises

- Static and Dynamic Structural Simulation/Seismic Earthquake Simulation
- Estimation of Dynamic Properties of Structures
- Soil Liquefaction Testing

Geotechnical and Geophysical Testing Laboratory

In this lab, we have some modern and sophisticated instruments for dynamic soil properties determination. Equipment for basic soil proper determination are also available there.

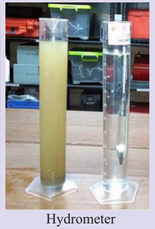

CPT Test


PS-Logging Test


Triaxial Test


Liquid Limit Apparatus


Sieve with Sieve Shaker


Hydrometer

Testing Capabilities and Services:

- Determination of the geotechnical engineering properties of soil and delineating soil stratigraphy
- Determination of soil's dynamic properties
- Determination of shear & compressional wavedepth versus velocity profiles
- Gradation of soil
- Liquid limit and plastic limit of soil

Projects

BUET-JIDPUS conducts different national and international projects and the research programs sponsored by Government, Non-Government and international organizations. For example,

ICIMOD Project (July 2014 - Sept.2015)

- Developing Dynamic Web-GIS based Early Warning System for the Communities at Landslide Risks in Chittagong Metropolitan Area, Bangladesh
- Funding Agency: International Centre for Integrated Mountain Development (ICIMOD), Nepal with funding from USAID and NASA



HEQEP Project Cp-3140 (Oct. 2014-Jun.2017)

- Development of Post-Graduate Research and Degree Programs in Disaster Risk Reduction at New Institute on Disaster Prevention and Urban Safety
- Funding Agency: University Grants Commission, Government of Bangladesh with Assistance from World Bank



Assessment of Seismic Exposure, Building & Socioeconomic Exposure Assessment and Contingency Planning For Ward 14 of Mymensingh Municipality (April 2017 - Sept. 2017)

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.



