JOINTLY ORGANIZED BY:

Construction Industry Development Council

International Council of Consultants

National Institute of Disaster Management (NIDM)

Ministry of Home Affairs, Govt. of India, New Delhi

Online Training Program on

"Rapid Visual Screening of Built-up Facilities"

December 7th - 9th , 2021

2:30 PM – 5:00 PM, IST

Background

While the safe dwelling constructed in the world over has been the kingpin for advancement of human civilization, it also poses a potential hazard in the event of earthquakes and other related hazards. A lacuna in the construction quality brings loss in the life. Hence, there is a definite urgency to inspect the vulnerability of these built infrastructures so as to take timely corrective steps to prevent failure. Identifying potential danger arising out of many ill-conceived structures rampantly mushrooming in the major cities of India has to be taken up with utmost national priority. Rapid Visual Screening (RVS) of building is one such simple tool to classify vulnerability class based on professional judgement.

Safe structure are the backbone of human coping capacity to healthy living. Unsafe houses magnify damage resulting from earthquake. Most structure in the country are non-engineered and lack of awareness and knowledge amongst the masses and mains regarding earthquake resisting construction techniques results in high seismic vulnerability. Inadequate building by laws and lenient regulatory regime only adds to the problem. Unsafe construction practices going on unabated.

RVS Training

The paradigm of sustainable development as a prime necessity in the realm of India's soaring economy, even though it was in existence in different form to developed nations, has been a latecomer to the Indian context. The upsurge of real estate developments across the country necessitates quality monitoring and regulation.. Hence, there is a definite urgency to inspect the vulnerability of these built-infrastructures so as to take timely corrective steps to prevent failure. Identifying potential dangers arising out of many ill-conceived structures rampantly mushrooming in the urban/ city of India is to be taken up with utmost national priority. Rapid Visual Screening (RVS) of building is one such simple tool to classify vulnerability class based on professional judgment. Therefore, a training program under the broad framework of NIDM was mooted for the Building professionals of the seismic prone establishment of the country.

While at every nook and corner unregulated building constructions spell out potential danger from earthquake and other man-made exigencies in-wait, it is high time to gear up for disaster preparedness aiming to minimize loss of life and property by proper planning in advance so that corrective measures are available to counteract the impact of the hazard before turning to disaster. Visualizing vulnerable built infrastructures in advance and equipping the community to meet it effectively is the hallmark of rational human being. So the motto is considered from the following standpoint:

1. The urgency of evaluating earthquake safety, with special motivation towards the health assessment of built-up facilities by Rapid Visual Screening (RVS).
2. To generate awareness among the vulnerable community in towards structural safety auditing of buildings.
3. To augment civic/regulatory bodies in ensuring quality standards in disaster resilient housing that's urgently needed to train the building officials about the Rapid Visual Screening (RVS) with particular reference to the evaluation of safety criteria for built-up facilities.

Rapid Visual Screening (RVS) is a cheap and fast procedure in assessing the safety of buildings and classifying them according to the risk that they pose in times of strong earthquakes. As per Indian Standard Code the Rapid Visual Screening method is designed to be implemented without performing any structural calculations. The procedure utilises a damageability grading system that requires the evaluator to:

1. identify the primary structural lateral load-resisting system, and

2. identify building attributes that modify the seismic performance expected for this lateral load-resisting system along with non-structural components.

A building must go for detailed evaluation if the following conditions are met:

A. The building fails to comply with the requirements of the preliminary evaluation.
B. A building has six storeys and higher in RC and steel; and three storeys and higher in unreinforced masonry.
C. Buildings located on incompetent or liquefiable soils and/or located near (less than 12 km) active faults and/or with inadequate foundation details.
D. Buildings with inadequate connections between primary structural members, such as poorly designed and/or constructed joints of precast elements.

Visually assessable variables, namely, storey number, cantilever extension, soft storey, weak storey, building quality, pounding effect, hill-slope effect, and peak ground velocity etc. are noted as earthquake hazard category. The inspection, data collection and decision-making process typically occurs at the building site, and is expected to take couple of hours for a building, depending on its size, accessibility and societal response. The screening is based on Code based Seismic Intensity, Building Type and Damageability Grade as observed in past earthquake and covered in MSK/European macro-intensity. The RVS procedure can be integrated with GIS-based city planning database and can also be used with advanced risk analysis software. The methodology also permits easy and rapid reassessment of risk of buildings already surveyed based on availability of new knowledge that may become available in future.

The main uses of this procedure in relation to seismic upgrading of existing buildings are:

⇒ To identify if a particular building requires further evaluation for assessment of its seismic vulnerability.

⇒ To assess the seismic damageability (structural vulnerability) of the building and seismic rehabilitation needs.

⇒ To identify simplified retrofitting requirements for the building (to collapse prevention level) where further evaluations are not considered necessary or not found feasible.

About the NIDM

Whereas the National Institute of Disaster Management (NIDM) is a statutory organization under the Ministry of Home Affairs, Government of India, mandated under the Disaster Management Act 2005 to be the apex institution with a vision to play the role of a premier institute in India and the region for capacity building, training, research, documentation and policy advocacy on all areas of disaster management in India. The efforts in this direction that began with the formation of the National Centre for Disaster Management (NCDM) in 1995 gained impetus with its re-designation as the National Institute of Disaster Management (NIDM) for training and capacity development. Under the Disaster Management Act 2005, NIDM has been assigned nodal responsibilities for human resource development, capacity building, training, research, documentation and policy advocacy in the field of disaster management. NIDM has established networking with a large number of scientific, technical, academic, training and practising organisations within and outside the governments at the local, provincial, national, regional and international levels for effective implementation of its mandate. The Institute works through strategic partnerships with various ministries and departments of the central, state and local governments, academic, research and technical organizations in India and abroad and other bi-lateral and multi-lateral international agencies. The Institute provides training in face-to-face, on-line and self-learning mode as well as satellite-based training. In-house and off-campus face-to-face training to the officials of the state governments is provided free of charge including boarding and lodging facilities. (More at www.nidm.gov.in)

About CIDC

Construction Industry Development Council (CIDC) was established jointly by five Union Ministries including Ministry of Road Transport & Highways, Urban Development, Railways & Defence with the Planning Commission as the lead Ministry, to help promote efficient methods, technology, management and skill development in order to develop and implement world class projects within least time and at least cost. CIDC's notable work has been enabling over 4 lac youth and artisans to find employment in the Construction Industry through skill development. CIDC has also undertaken several other initiatives to develop and upgrade the industry including setting up & promotion of organisations for Dispute Resolution, High Technology etc. for Construction Sector.

About ICC

International Council of Consultants (ICC), as the apex representative organization of consultancy services was constituted under the patronage of Former Chief Justice of India Mr. Y.V. Chandrachud and several other senior luminaries from engineering profession. Dr. P. R. Swarup, Director General, CIDC is presently the President of ICC and the Governing Council of ICC has representation from several important professional organizations. The specialized role of Consultants is increasingly playing a more significant part in an economy.

Topics:

ONLINE lecture by experts

1. State of the ART of RVS in Built up facilities, case study of 10000 buildings in Delhi
2. Mapping of Structural Vulnerabilities in Builtup facilities
3. RVS Technique and Risk rating of buildings
4. Nonstructural Criteria in vulnerability mapping of buildings
5. Deficiency in codal provisions and performance objectives of Stilt building during earthquake
6. Online certification based on RVS scores
7. Retrofitting of Buildings
8. Discussion on RVS format – exercise

CERTIFICATE

A Certificate will be awarded to each participant on successful completion of the programme.

Instructions for login:

1. In case you have ever registered on NIDM portal (https://training.nidm.gov.in/) , login with your email-ID (You may have to reset your password). In case you are new user, register yourself following given instructions.

2. Go to "Forthcoming Events".

3. Find on dates "07-12-2021 -- 09-12-2021", the course titled **"Online course on Rapid Visual Screening of Built-up facilities in association with CIDC & ICC."**

4. Click on **Enroll now**.

5. You will get meeting link just before the event on your email-ID.

For sponsorships/registrations or further enquiries and details, please contact:

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OR

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SCHEDULE

December 7 - 9, 2021 (2:30 PM – 5:00 PM, IST)

Day 1: Tuesday, Dec 07 2021

Theme: Rapid Visual Screening - fundamentals

Time	Resource Person
Moderator: Mr RubaabSood, Head, Disaster Risk Management, FICCI & Prof. Chandan GHosh, NIDM	
2:30 PM – 3:15 PM	**Inaugural Session** Welcome Address by **Dr. P. S. Rana, Chairman** CIDC Opening Remarks by **Prof Chandan Ghosh**, Professor& Head, Resilience & Infrastructure Division, NIDM, Government of India Special Address by **Dr. P. R. Swarup, Director General, CIDC** Special Address by **Er. N K Sinha, former DG(RD)&SS**, MoRTH Inaugural Address by **Major General M K Bindal,** Executive Director, NIDM Government of India * Vote of Thanks by Er. Sunil Mahajan, ADG, CIDC
3:15PM-4:00PM	**"State of the ART of RVS in Built up facilities, case study of 10000 buildings in Delhi"** by **Dr Chandan Ghosh**, Professor& Head, Resilience and Infrastructure, NIDM, Government of India
4:00 PM – 4:45 PM	"**Mapping of Structural Vulnerabilities in Builtup facilities**" – **Dr Hemant K. Vinayak**, Associate Professor, Entrepreneurship Dev. & Industrial Coordination, NITTRR, Chandigarh
Question and Answer: 15 mins	

Day 2: Wednesday, Dec 8, 2021

Theme: RVS Methodology and Evaluation Criteria

Time	Resource Person
2:30 PM – 3:15 PM	"**RVS Technique and Risk rating of buildings**" by **Mr Anshuman Shukla**, CEO, TESRA, Dehradun
3:15 PM – 4:00 PM	"**Nonstructural Criteria in vulnerability mapping of buildings**" **Dr Amir Ali Khan**, RID, NIDM
4:00 PM – 4:45 PM	"**Deficiency in codal provisions and performance objectives of Stilt building during earthquake**" by **Er Alok Bhowmik**, Founder, B&S Engineering Consultants Pvt. Ltd
Question and Answer: 15 mins	

Day3: Thursday, Dec 9 2021

Theme: RVS constrains and Certification in context of making DM plan

Time	Resource Person
2:30 PM – 3:15 PM	"**Online certification based on RVS scores**" by Shri Manish Kumar Bharti, CEO, Cortex Construction Solutions Pvt. Ltd
3:15 PM – 4:00 PM	"**Retrofitting of Buildings**" Case Studies by Shri Nitin Verma, ACI India Limited
4:00 PM – 4:30 PM	**Discussion on RVS format – exercise** by Prof. Chandan Ghosh, NIDM
Question and Answer followed by Vote of Thanks: 30 mins	

Programme Team:

- **Prof. Chandan Ghosh, Dr Garima Aggarwal and Shaad Warsi, NIDM**
- **Shri Pravin Tiwari, GM CIDC (+91 9818419039; email: ptiwari11@gmail.com)**
- **Ms. Adesh Kumari, DGM CIDC (+91 9999935755; email: cidcindia@gmail.com)**