



Workshop
on
Risk and Safety Assessment of Built Environment in
IIT Roorkee Campus
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Organized by

Centre of Excellence in Disaster Mitigation and Management (CoEDMM)

In association with

Institute Safety Committee

And Estate and Works

Indian Institute of Technology Roorkee



Introduction: Classification of hazards

- **Natural**->
 - **Geophysical:** Earthquake, Tsunami
 - **Hydrological:** Flood, Landslide
 - **Meteorological:** Cyclone, lightning
 - **Climatological:** Drought
 - **Biological**
- **Human induced**->
 - **HazMat**
 - **Fire**



Introduction

- Till today, vulnerability assessment was more of a **technical job**.
 - Until and unless, you, as an individual, are aware of the vulnerabilities of your living / working space, we, as a nation, can never be resilient.
- Technical documents of assessment have been re-modelled in such a way that everyone will be **able to identify and assess their vulnerabilities**.
- We will show you how to identify and assess vulnerability of your building to four major hazards, seismic hazard, fire, flood and HazMat

Procedure: Benefits

- This is a first-of-its-kind initiative.
- We will be handing you out **4 assessment forms**.
 - Each of these forms require YES / NO answers.
 - At the end of filling them out, you will be:
 - In a position to **identify the points of failure** in your building, specific to a hazard.
 - Have a **raised level of awareness** and it will inculcate in you a culture of **preparedness**.
 - For us,
 - We will be able to **quantify your vulnerabilities** and assist you on how to build your capacity.
 - We will, together, be able to move towards **developing a DM plan**.
- Let us see, how to build resilient India!

Easy Seismic Vulnerability Screening (ESVS) and Assessment



Parameters	COMPLETENESS	
Storeys	0.031	3.073
Soil type	0.014	1.366
Foundation type	0.001	0.114
Ground water	0.001	0.098
Building type	0.007	0.732
Thickness of infill	0.000	0.008
Extension to original building	0.002	0.220
Staircase	0.009	0.933
Vertical irregularity	0.016	1.646
plan irregularity	0.016	1.646
Falling hazards	0.009	0.933
Absence of Evacuation plan	0.024	2.360
Non-Conduction and non-participation of mock drills	0.001	0.087
Absence of knowledge of EEW	0.001	0.098
Absence of emergency communication system	0.001	0.061
Absence of safety and risk related discussion and forums	0.134	13.374
VULNERABILITY	0.267	26.748

Easy Flood Vulnerability Screening (EFLVS) and Assessment



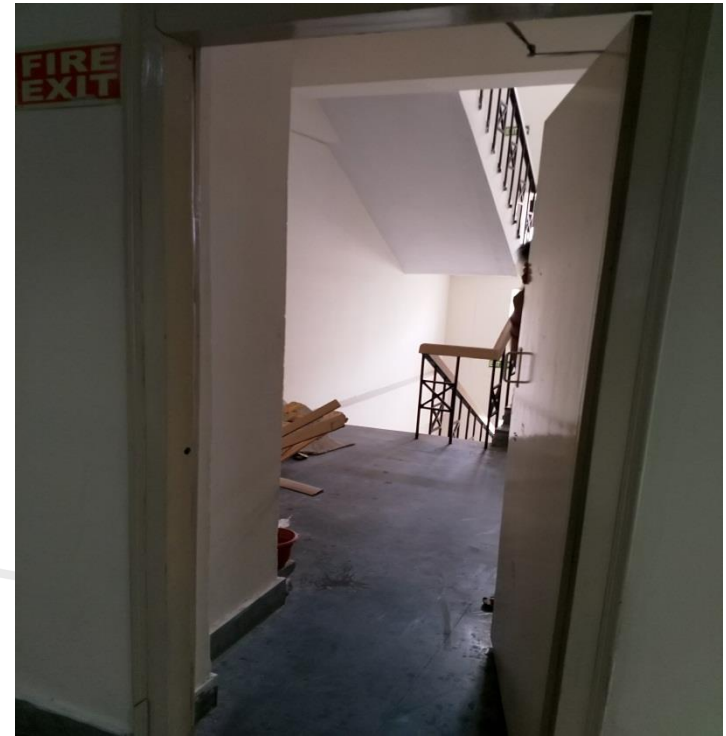
Parameters	COMPLETENESS	
Closeness to water body (river, lakes, etc.)	0.003	0.290
Evidences of long hours of water-logging in the past	0.003	0.290
Recurrence period	0.045	4.534
Contribution of drains and sewers to water-logging	0.002	0.202
Height of water logging experienced in the past	0.000	0.027
Presence of important documents / equipments in the basement or ground-floor	0.102	10.202
Duration of water-logging	0.004	0.378
Secondary issues like erosion, deposition or damping	0.014	1.377
Unavailability of access roads	0.003	0.290
Absence of flood proofing efforts (Lack of intention to implement the lessons learnt)	0.002	0.202
Absence of flood-warning systems or idea of how to react in such cases	0.002	0.202
Contamination of potable drinking water due to water-logging or floods	0.003	0.290
Effect of transmissions being affected by water logging	0.078	7.834
Flood Vulnerability	0.261	26.120

Easy Fire Vulnerability Screening (EFVS) and Assessment



Parameters	COMPLETENESS	
Absence of evacuation plan (what to do after the alarm is sounded)	0.003	0.342
Absence of awareness due to lack of mock-drills or workshops	0.032	3.150
Lack of maintenance of fire fighting systems	0.092	9.231
Absence of fire warning, fire alarm	0.049	4.945
Absence of discussions and forums on fire safety	0.012	1.245
Hazard mapping of building in terms of fire safety	0.022	2.198
Code-wise construction	0.003	0.342
Code-wise arrangement of exit	0.003	0.342
Code-wise construction of doorways	0.003	0.263
Code-wise construction of staircase	0.092	9.231
Lifts	0.003	0.342
Absence of procedure of restriction of spread of fire and smoke	0.049	4.945
Absence of staircase and corridor lights	0.028	2.802
Fire Vulnerability	0.394	39.377

Easy Fire Vulnerability Screening (EFVS) and Assessment



Conclusion

- Our capacity to deal with few of the hazards, mentioned here, are good on some fronts and pretty bad on some other.
 - There is a lot of work to be done, but we have made it easy for you.
- We expect you to get back to us within **15 days** with the filled forms.
 - We understand that you might not be able to fill it up completely and for such instances, we are here to help you!
- The **responsibility is on everyone of us!**
- IITR has always set an example, even on YouTube! Let's do the same in this case too!

Thank You

We are happy to assist you:

Pankaj Kumar: pk007.ddm2014@iitr.ac.in

Sangeeta: sangm.ddt2015@iitr.ac.in

Jeevan: jeevanm1.ddt2017@iitr.ac.in