Report
on
3-Day workshop on
"Disaster-Resilient Infrastructure Development"

organized

by

Centre for Disaster Risk Reduction,

Department of Civil Engineering,

and

Department of Planning and Geomatics

Islamic University of Science and Technology,
Awantipora, Kashmir-192122 (J&K)

In collaboration with

Department of Disaster Management, Relief,
Rehabilitation, and Reconstruction,
Govt. of Jammu and Kashmir

VENUE: Conference Hall, Rumi Library, IUST, Kashmir
28th to 30th, July, 2025

TABLE OF CONTENTS

FLYER


JKDMA
3-DAY TRAINING & CAPACITY BUILDING WORKSHOP
On
DISASTER RESILIENT INFRASTRUCTURE DEVELOPMENT
(Building a Disaster Resilient J&K)
JULY 28-30, 2025
ISLAMIC UNIVERSITY OF SCIENCE & TECHNOLOGY, KASHMIR
CENTRE FOR DISASTER RISK REDUCTION
DEPT. OF CIVIL ENGINEERING
DEPT. OF ARCHITECTURE
DEPARTMENT OF DISASTER MANAGEMENT, RELIEF, REHABILITATION AND RECONSTRUCTION
GOVERNMENT OF JAMMU & KASHMIR
VENUE:
CONFERENCE HALL, HUMI LIBRARY, IUST
DR. IRFAN MAQBOOL

1. About IUST

The Islamic University of Science and Technology (IUST), located in Awantipora, Kashmir, is a premier higher education institution established with the aim of advancing knowledge and fostering innovation in science, technology, and other academic disciplines. Founded in 2005, the university has become a hub for academic excellence, research, and professional development in the region, playing a pivotal role in addressing local and global challenges. IUST offers a wide range of undergraduate, postgraduate, and doctoral programs across various disciplines, including engineering, technology, social sciences, business, humanities, and architecture. The university emphasizes a multidisciplinary approach to education, integrating modern research and teaching methodologies to enhance students' knowledge and skill sets. The university is deeply committed to promoting research and innovation. It has established several research centers and initiatives to tackle emerging issues, including the Centre for Disaster Risk Reduction (CDRR), which focuses on disaster preparedness, mitigation, and resilience-building—an increasingly vital area of study for the region. IUST prioritizes student engagement and development, offering numerous co-curricular activities, workshops, and seminars to enhance students' leadership skills, critical thinking, and professional growth. The university fosters a dynamic campus culture, encouraging students to participate in debates, sports, and other extracurricular activities. IUST maintains strong collaborations with national and international universities, research institutions, and industries. These partnerships aim to foster academic exchange, joint research projects, and knowledge-sharing in sustainable development, climate change, disaster risk reduction, and technological advancements. IUST envisions becoming a leader in higher education and research, not just within Jammu & Kashmir but also on the global stage. It is committed to empowering students to meet the needs of the modern world, with a strong emphasis on innovation, sustainability, and community service. The university's growing reputation as a center of learning is reflected in its expanding academic programs, world-class faculty, and cutting-edge research facilities, all contributing to its goal of shaping the future of education and development in the region.

2. About JKDMRRR

The Jammu & Kashmir Department of Disaster Management, Relief, Rehabilitation & Reconstruction (JKDMRRR) came into effect on 30 December 2016 vide Cabinet Decision of the J&K govt. The mission of the Department of DMRRR is to ensure the safety of communities by promoting a community-based approach to Disaster Risk Reduction (DRR). This involves reducing vulnerabilities and enhancing effective disaster response through awareness programs and capacity-building initiatives. The department is dedicated to implementing appropriate measures to prevent danger and mitigate risks, ensuring that both natural and man-made disasters are addressed comprehensively. In times of disaster, the DMRRR provides timely assistance to those in distress, helping them recover and rebuild. Additionally, the department plays a key role in resolving issues related to displaced communities, including Kashmiri/Jammu migrants, those displaced in 1947, Chhamb displaced persons (1965/1971), and West Pakistani refugees. It aims to bridge the gap in identifying sufferers of natural calamities, ensuring that all affected individuals receive the support they need. The DMRRR envisions a future where Disaster Risk Reduction (DRR) is fully integrated into all developmental initiatives, ensuring the sustainability of investments and creating a disaster-resilient Jammu & Kashmir. By enhancing the capacity of all stakeholders—governments, communities, and institutions—the department seeks to respond to disasters in a planned and effective manner, minimizing the loss of lives, livelihoods, and critical infrastructure. This includes protecting essential services like healthcare, education, and social and cultural assets from the impacts of disasters. Moreover, the department is committed to providing rapid and appropriate assistance to disaster victims, facilitating their recovery process efficiently. Alongside disaster management efforts, DMRRR continues to support Kashmiri/Jammu migrants, displaced persons of 1947, Chhamb displaced persons (1965/1971), and West Pakistani refugees, ensuring their issues are addressed and their rehabilitation needs met. The overarching goal is to make Jammu & Kashmir a safer, more resilient region, prepared to face any disaster.

3. Approval order

ISLAMIC UNIVERSITY OF SCIENCE & TECHNOLOGY, KASHMIR (IUST)

Office Order No.: 695 of 2025
Dated: 08-07-2025

Sanction is hereby accorded to:

i) Organizing of six-day Training and Capacity Building Workshop on Disaster Resilient Infrastructure Development by the Centre for Disaster Risk Reduction (CDRR) from July 08-to, 2025.

ii) Resource persons for the workshop:

	External
Prof. V.K. Gaur	CSIR, Honorary Emeritus Scientist
Dr. Amir Ali Khan	Associate Professor, NDIM
Prof. Keya Mitra	Indian Institute of Engineering Sciences and Technology, West Bengal
Er. Afzal Ahmad	Civil Engineer, South Kashmir
	Internal
Prof. Shakil Ahmad Romshoo	Vice-Chancellor, IUST
Mr. Mehraan Qureshi	Assistant Professor, Dept. of Architecture

iii) Constitution of committees for organizing of the workshop as reflected in Annexure-A to this order (printed overleaf).

By Order,

(Assistant Registrar)
Establishment

No. IUST/Reg/Adm/25/3597
Dated: 08-07-2025

Copy to:

- Dean Academic Affairs
- Finance Officer with a request that funds received for organizing of the workshop be released for its smooth conduct
- Dy Dean, School of Sciences
- Coordinator CDRR
- Committee members
- File

4. Organizing and other committees

Committee for the 3-Day Training and Capacity Building Workshop on "Disaster Resilient Infrastructure Development" to be held on 28-30th July, 2025, IUST, Kashmir

Annexure A to O.O. No: 295 of 2025 Dated: 16-07-2025

S. No.	Name	Designation	Position
A.	**Organizing Committee**		
1.	Prof. Shakil Ahmad Romshoo	Hon'ble Vice-Chancellor, IUST	Chairperson
2.	Prof. Abdul Wahid	Registrar	Member
3.	Prof. Shakeel Ahmed	Consultant,	Member
4.	Mr. Sameer Wazir	Finance Officer	Member
5.	Dr. Aabid Hussain Shafla	I/c Dean, School of Sciences	Member
6.	Dr. Raheela Hassan	I/c Dean Outreach	Member
7.	Mr. Qazi Qamar Iqbal	Head, Dept. of Architecture	Member
8.	Dr. S. Iqbal Qureshi	Dy. Registrar, Estate & Transport	Member
9.	Mr. Mir Aijaz Ahmad	I/c Head, Dept. of Civil Engineering	Member
10.	Dr. Sumaira Nazir Zaz	Coordinator, Dept. of ES&CC	Member
11.	Dr. Tariq Abdullah	I/c Head, Dept. of Planning & Geomatics	Member
12.	Dr. Mohmad Aabid Bhat	Coordinator, MCSS	Member
13.	Dr. Irfan Maqbool Bhat	Coordinator, CDRR	Org. Secretary
14.	Mr. Waseem Qadir	Assistant Professor, CDRR	Co-Org. Secretary
B.	**Technical Committee**		
1.	Prof. Shakeel Ahmed	Consultant	Chairperson
2.	Dr. Raheela Hassan	I/c Dean Outreach	Member
3.	Mr. Qazi Qamar Iqbal	Head, Dept. of Architecture	Member
4.	Mr. Mir Aijaz Ahmad	I/c Head, Dept. of Civil Engineering	Member
5.	Dr. Sumaira Nazir Zaz	Coordinator, Dept. of ES&CC	Member
6.	Dr. Irfan Maqbool Bhat	Coordinator, CDRR	Member
7.	Dr. Javia Bashir	AP, Dept. of Planning & Geomatics	Member
8.	Dr. Mohmad Aabid Bhat	Coordinator, MCSS	Member
9.	Mr. Waseem Qadir	Assistant Professor, CDRR	Member
C.	**Transport Committee**		
1.	Mr. Mohammad Saleem	Asstt. Prof., Dept. of Planning & Geomatics	Chairperson
2.	Mr. Umar Farooq Dar	Asstt. Prof., Dept. of Architecture	Member
D.	**Food and Catering Committee**		
1.	Dr. Tariq Ahmad Ganaie	Asstt. Prof., Dept. of Food Technology	Chairperson
2.	Dr. Yasir Altaf	Asstt. Prof., Dept. of ES&CC	Member
3.	Mr. Waseem Qadir	Asstt. Prof., CDRR	Member
E.	**Finance Committee**		
1.	Mr. Murshed Ahmad Khan	Deputy Finance Officer	Chairperson
2.	Dr. Irfan Maqbool Bhat	Coordinator, CDRR	Member
3.	Dr. Tariq Abdullah	I/c Head, Dept. of Planning & Geomatics	Member
F.	**Print and Media Committee**		
1.	Dr. Monisa Qadiri	Asstt. Prof., Dept. of J&MC	Chairperson
2.	Dr. Dharam Chand	Asstt. Prof. Dept. of ES&CC	Member
3.	Mr. Mehran Qureshi	Asstt Prof., Dept. of Architecture	Member
4.	Dr. Sayar Ahmad Mir	Asstt. Prof. (C), Dept. of J&MC	Member

5. Programme schedule

3-Day Training and Capacity Building Workshop
On
"Disaster-Resilient Infrastructure Development"
July 28-30, 2025
Venue: Conference Hall, Rumi Library, IUST, Kashmir

Day & Date	Activities		TIME (IST)
Day-1 (Monday) 28-07-2025	Registration of Participants	**Venue:** Outside the Conference Hall, Rumi Library	10:00 am–10:30 am
	Inaugural Session (Anchor: Dr. Jasia Bashir, AP, DoP&G, IUST)		
	University Tarana	Recording	10:30 am–10:32 am
	Welcome Address	**Dr. Irfan Maqbool Bhat** Assistant Professor and Coordinator, CDRR, IUST	10:32 am–10:35 am
	Opening Remarks	**Prof. A. H. Moon** Dean Academic Affairs, IUST	10:35 am–10:40 am
	Remarks by Special Guest	**Ms. Snober Jameel, JKAS** Deputy Secretary to the Government, Dept. of DMRRR, Govt. of J&K	10:40 am–10:45 am
	Address by Guest of Honour	**Dr. Muzaffar Ahmad** Former Member, National Disaster Management Authority (NDMA), Govt. of India	10:45 am–10:50 am
	Address by the Chief Guest	**Prof. V. K. Gaur** Honorary Emeritus Scientist, CSIR Fourth Paradigm Institute, Bangalore	10:50 am–11:00 am
	Address by HVC	**Prof. Shakil Ahmad Romshoo** HVC, IUST	11:00 am–11:10 am
	Felicitation of Guests		11:10 am–11:13 am
	Vote of Thanks	**Mr. Waseem Qader** Assistant Professor, CDRR, IUST	11:13 am–11:15 am
	Tea Break (Venue: Outside the Conference Hall, Rumi Library)		11:15 am–11:30 am

	Technical Session-1 (Rapporteur: Dr. Irfan Maqbool Bhat, AP, CDRR, IUST)		
	TOPIC/ACTIVITY	**RESOURCE PERSON/ EXPERTS**	**TIME (IST)**
	Roles and Responsibilities in Disaster Management	Representative, JKDMRRR	11:30 am–11:45 am
	Talk & Demonstration-1: Safety of Critical Infrastructure in High Seismic Zone	**Dr. Muzaffar Ahmad** Former Member, National Disaster Management Authority (NDMA), Govt. of India	11:45 am–01:00 pm
	Lunch Break (Venue: CIED, IUST)		01:00 pm–02:00 pm
	Technical Session-2 (Rapporteur: Dr. Jasia Bashir, AP, DoP&G, IUST)		
	Talk & Demonstration-2: An approach to Hazard-Resilient Infrastructure Development in J&K	**Prof. V. K. Gaur** Honorary Emeritus Scientist, CSIR Fourth Paradigm Institute, Bangalore	02:00 pm–03:15 pm
	Tea Break (Venue: Outside the Conference Hall, Rumi Library)		03:15 pm–03:30 pm
	Talk & Demonstration-3: Micro-Seismic Zonation of Kashmir Valley	**Prof. Shakil Ahmad Romshoo** HVC, IUST	03:30 pm–05:00 pm
Day-2 (Tuesday) 29-07-2025	**Technical Session-3** (Rapporteur: Er. Misba Gul, AP, DoCE, IUST)		
	Talk & Demonstration-4: Field Problems in Infrastructure Development	**Er. Afzal Ahmad**, Civil Engineer, Kashmir	10:30 am–11:15 am
	Tea Break (Venue: Outside the Conference Hall, Rumi Library)		11:15 am–11:30 am
	Activity-1: Identifying Disaster-Resilient Gaps in Existing Infrastructure	**Er. Afzal Ahmad**, Civil Engineer, Kashmir	11:30 pm–01:00 pm
	Lunch Break (Venue: CIED, IUST)		01:00 pm–02:00 pm
	Technical Session-4 (Rapporteur: Er. Mir Ejaz, AP and Head, DoCE, IUST)		
	Talk & Demonstration-5: Quantifying Earthquake Hazards in Kashmir	**Dr. Muazim Jan** Scientist, CSIR-4PI, Bengaluru	02:00 pm–02:30 pm
	Activity-2: Rapid Visual Surveys (RVS) of the IUST Campus Buildings	**Dr. Midhat Fayaz**, Scientist, CoE, UoK	02:30 pm–03:30 pm
	Tea Break (Venue: Outside the Conference Hall, Rumi Library)		03:30 pm–03:40 pm
	Activity-3: Visit to Ultratech Lab, Innovation Campus, IUST for demonstration of advance construction material	**Er. Mir Aijaz**, Head, DoCE, IUST	03:40 pm–05:00 pm

Day-3 (Wednesday) 30-07-2025	**Technical Session-5** (Rapporteur: Ar. Qazi Qamar Iqbal, Dean, School of Architecture, IUST)		
	Talk & Demonstration-6: Region-Specific Disaster-Resilient Infrastructure Development	**Prof. Keya Mitra**, Department of Architecture and Planning Indian Institute of Engineering Science and Technology, West Bengal	10:30 am–11:15 am
	Tea Break (Venue: Outside the Conference Hall, Rumi Library)		11:15 am–11:30 am
	Activity-4: Seismic Vulnerability: Traditional and Modern Architecture of Kashmir	**Ar. Mehran Qureshi**, AP, DoA, IUST	11:30 pm–01:00 pm
	Lunch Break (Venue: CIED, IUST)		01:00 pm–02:00 pm
	Panel Discussion (Chairperson: **Prof. Shakil Ahmad Romshoo**, HVC, IUST)		
	Discussion Topic: How to Build a Disaster-Conscious Society? **Panellists**: Prof. Shakeel Ahmed, Prof. Javid A. Mir, Ar. Qazi Qamar Iqbal, Representative JKDMRRR, and Participants)		02:00 pm–03:30 pm
	Valedictory Session (Anchor: Dr. Jasia Bashir, AP, DoP&G, IUST)		
	Welcome Address	**Prof. Shakeel Ahmed** Consultant, IUST	03:30 pm–03:35 pm
	Summary of the Workshop	**Dr. Irfan Maqbool Bhat** Assistant Professor, CDRR, IUST	03:35 pm–03:45 pm
	Remarks of the Dean Research	**Dr. Aabid Hussain Shalla** Dean Research, IUST	03:45 pm–03:50 pm
	Certificate Distribution	By HVC and the Chief Guest	03:50 pm–04:05 pm
	Closing Remarks of the Chief Guest	**Ms. Snober Jameel, JKAS** Deputy Secretary to the Government, Dept. of DMRRR, Govt. of J&K	04:05 pm–04:15 pm
	Presidential Address	**Prof. Shakil Ahmad Romshoo** HVC, IUST	04:15 pm–04:25 pm
	Vote of Thanks	**Er. Mir Aijaz** Head DoCE, IUST	04:25 pm–04:30 pm
	High Tea and End of the Workshop		04:30 pm–05:00 pm

6. List of registered/nominated participants

A	**Civil Secretariat, Srinagar**		
S. No.	**Name**	**Designation**	**Department**
1	Ms. Snober Jameel, JKAS	Deputy Secretary to the Govt.	Dept. of Disaster Management Relief, Rehabilitation, & Reconstruction (DMRRR), Govt. of J&K
2	Irfan Mehmood	Head Assistant	
3	Arvind Raina	Asst. Programmer	
4	Iqra Yousuf	Junior Assistant	
5	Muzaffar Hussain Wani, JKAS	Deputy Secretary to the Govt. PW(R&B)	PW(R&B) Department
B	**List of Participants from Civil & Structural Engineers (PW(R&B) Department North Kashmir**		
6	Firdous Ahmad Ganie	Ex. Engineer	PW (R&B) Dept. North Kashmir
7	Er. Ishfaq Ahmad	Asst. Engineer	R&B Division Uri
8	Aamir Nazir	Asst. Engineer	R&B Division Sopore
9	Er. Ishfaq Ahmad Rather	Asst. Engineer	SE Circle Bandipora
10	Bilal Ahmad Khan	Asst. Engineer	R&B Division Kupwara
11	Mohsin Rashid Najar	Asst. Engineer	R&B Division Handwara
12	Er. Rafaqat Rashid	Asst. Engineer	SE Circle Baramulla

13	Er. Dar Sarvat Gull	Asst. Engineer	R&B Division Langate
14	Er. Mudasir Rehman	Asst. Engineer	R&B Division Kralpora
15	Er. Owais Rasool	Asst. Engineer	R&B Division Tangdar
C	**List of Participants from Civil & Structural Engineers (PW(R&B) Department Central Kashmir**		
16	Humarah Jabeen	Asst. Engineer	PW (R&B) Central Kashmir
17	Suhaib Firdous	Junior Engineer	R&B Circle Srinagar North
18	Duha Nissar	Junior Engineer	R&B Circle Srinagar South
19	Shadman Punjabi	Junior Engineer	R&B Circle Srinagar Soura
20	Ahmar Farooq Bhat	Junior Engineer	R&B Circle Srinagar Budgam
D	**List of Participants from PWD Designs, Inspections, and Quality Control (DIQC), J&K**		
21	Er. Muzaffer Hussain Koul	Asst. Executive Engineer	DIQC
22	Er. Ahmar Malik	Deputy Research Officer	DIQC
23	Er. Sayed Raza Ali Naqvi	Asst. Research Officer	DIQC
24	Er. Malik Yawar Hayat	Junior Assistant	DIQC
E	**Professionals from Deputy Commissioner/ District Disaster Management Authorities (DDMAs), J&K**		
25	Syed Altaf Hussain Musvi (JKAS)	Addl. Deputy Commissioner (CEO DDMA) Baramulla	DDMA/Deputy Commissioner Baramulla

26	Ms. Rehana Fayaz	Asst. Commissioner, Revenue, Baramulla	DMRRR
27	Dr. Sheikh Mohammad Ashraf (JKAS)	Addl. Deputy Commissioner (Nodal Officer, DM)	Deputy Commissioner, Pulwama
28	Dr. Zakir Hussain (JKAS), Revenue	Additional Deputy Commissioner, Shopian	DDMA Shopian
29	Mr. Zaffar Husson Shawl (JKAS), Revenue	Additional Deputy Commissioner, Bandipora	Deputy Commissioner Bandipora (Revenue)
30	Mr. Sajad Ahmad Rather	AEO, Nodal Officer, Control Room, Bandipora	
31	Mr. Gulzar Ahmad (JKAS)	Additional Deputy Commissioner, Kupwara	Deputy Commissioner, Kupwara
32	Mr. Aadil Fareed (JKAS)	Additional Deputy Commissioner, CEO, DDMA, Srinagar	District Magistrate, Srinagar
33	Janbaz Shakeel u Rahman Tak	Naib Tehsildar (I/C HQA)	Deputy Commissioner, Budgam
34	Mr. Vikar Ahmed Giri, JKAS	Addl. Deputy Megistrate (ADM) Kulgam	Office of the Deputy Commissioner, Kulgam
35	Mr. Ali Mohammad Bhat	Tehsildar, HQA, DDMO	Deputy Commissioner, Kulgam
36	Dr. Sheikh Salah-ud-din (JKAS)	Assistant Commissioner Revenue	Deputy Commissioner, Ganderbal
37	Fozia Gull	Teacher	School Education Department
F	**SDA Srinagar, J&K Police Housing Corporation & Directorate of Urban Local Bodies, Kashmir**		
38	Arvin Gull	Assistant Engineer	Srinagar Development Authority
39	Wahid Ali Sodagar	Assistant Engineer	Srinagar Development Authority
40	Ghulam Nabi Najar	Junior Engineer	Srinagar Development Authority
41	Mohd. Dawood Itoo	Assistant Engineer	J&K Police Housing Corporation,

42	Tariq Ahmad Wani	Junior Engineer	Srinagar
43	Suhail Ahmad Malik	Executive Engineer, MC Shopian	Urban Local Bodies, Shopian
44	Nissar Ahmad Shahbaz	Head Assistant, MC Budgam	Urban Local Bodies, Budgam
45	Ajaz Ahmad Peer	Khalifwarzi Assistant, MC Khrew	Urban Local Bodies, Pulwama
46	Najeeb Geelani	Xen Mechanical	SMC Srinagar
47	Danish Shah	AEE City Drainage	
48	Shahid Asrar	Estates/Transport Officer	
49	Mohd Rafiq Rather	AE	R&B, Tangmarg
50	Dr. Nasir Ahmad	ADDC	Shopian
51	Hilal Ahmad	AE	R&B, Sopore
52	Shahnawaz Ahmad Mir	Senior Assistant	Shopian
53	Aqib Rafiq Shah	AE	SMC, City drainage
54	Shariq	Junior Consultant	DDMA, Baramulla
55	A Syed Shah	Consultant	DDMA, Baramulla
56	Kysir Quyoom Mir	Operator	DDMA Baramulla
G	**Engineering Wing, IUST, Kashmir**		
57	Zahid Manzoor Wani	Jr. Engineer (Civil)	Engineering Wing, IUST

58	Mir Javid Hassan	Works Supervisor (Civil)	
59	Muneer Ahmad Khan	Works Supervisor (Civil)	
H	**Department of Civil Engineering (DoCE), IUST, Kashmir**		
60	Er. Mir Aijaz Ahmad	Asst. Professor & Head	DoCE, IUST
61	Dr. Shujaat Hussain	Assistant Professors	
61	Er. Misba Gull		
62	Er. Mohd Dilawar Bhat		
63	Dr. Misbah Bashir		
64	Mr. Mohd. Iqbal Mirza		
65	Dr. Faheem Sadiq Bhat		
66	Dr. Ishfaq Mohi Ud Din		
67	Er. Tahir Hussain Naik		
68	Er. Muzafar Ahmad Kouchay		
69	Mr. Tahir Mohammad Bhat	Research Scholar	
70	Mr. Najam Us Saqib	Research Scholar	
71	Er. Aysia Naik	Technical Intern	
I	**Centre for Disaster Risk Reduction (CDRR), IUST, Kashmir**		
72	Dr. Irfan Maqbool Bhat	Assistant Professor	CDRR), IUST

73	Mr. Waseem Qader	Assistant Professor	
74	Ms. Arjumand Bashir	Sr. Technical Assistant	
75	Shakir Mushtaq	Research Scholar	
76	Irfan Ahmad Bhat	Research Scholar	
77	Yusra Nazir	Administrative Intern	
J	**Department of Architecture (DoA), IUST, Kashmir**		
78	Mr. Qazi Qamar Iqbal	Associate Professor	DoA, IUST
79	Mr. Mehran Qureshi	Assistant Professor	
80	Mr. Umar Farooq Dar	Assistant Professor	
K	**Department of Geomatics, IUST, Kashmir**		
81	Dr. Jasia Bashir	Assistant Professor	DoG, IUST
82	Mr. Mohammad Saleem	Assistant Professor	
83	Ms. Aurooj Shafi	Research Scholar	
L	**Department of ESCC, IUST, Kashmir**		
84	Dr. Sumira Nazir	Coordinator	DoESCCA, IUST
85	Dr. Yasir Altaf	Assistant Professor	
86	Dr. Dharam Chand	Assistant Professor	

7. Summary of the workshop

7.1. Introduction

Disaster-Resilient Infrastructure refers to the strategic design, construction, and management of infrastructure systems to withstand, adapt to, and quickly recover from natural and man-made disasters. This concept is becoming increasingly important worldwide, as the frequency and severity of hazards such as earthquakes, floods, and landslides continue to rise. Development of Disaster-Resilient Infrastructure goes beyond traditional, reactive disaster management approaches by emphasizing proactive measures that reduce damage, protect citizens' safety, and maintain essential services like power, water, and transportation. In this context, a major effort to improve disaster preparedness in the Union Territory of Jammu and Kashmir, the Islamic University of Science and Technology (IUST) established a new Centre for Disaster Risk Reduction (CDRR). It has partnered with the Jammu and Kashmir Department of Disaster Management, Relief, Rehabilitation, and Reconstruction (JKDMRRR) to organize a series of training and capacity-building workshops. This initiative directly addresses the region's high vulnerability to natural disasters such as earthquakes, floods, and landslides and aligns with national frameworks like the National Disaster Management Plan (2019) and the Prime Minister's 10-Point Agenda on DRR. The first program, a 3-day workshop on "Disaster-Resilient Infrastructure Development," was held from July 28-30, 2025. This partnership highlights a commitment to integrating research, education, and community engagement to foster a more disaster-resilient society. The event was honored by the presence of Prof. V. K. Gaur, Honorary Emeritus Scientist, CSIR, who served as the Chief Guest. Prof. Muzaffar Ahmad, a former member of the NDMA of the Government of India, was the guest of honor, and Ms. Snober Jameel, deputy secretary of DMRRR and government of J&K, was the special guest. The occasion was also attended by IUST's leadership, including the Vice Chancellor, Prof. Shakil Ahmad Romshoo, as well as Prof. A.H. Moon, Dean of Academic Affairs, and Prof. Abdul Wahid, Registrar.

The workshop brought together a diverse group of 80 participants, including Assistant Deputy Commissioners from District Disaster Management Authorities, engineers from the Public Works (R&B) Department, Srinagar Municipal Corporation, Srinagar Development Authority, and faculty and students from the IUST. This event marks the start of a collective effort to integrate research, education, and community engagement to build a more resilient society in Jammu and Kashmir.

7.2. Proceedings of Day 1

Dr. Irfan Maqbool Bhat, Coordinator, CDRR, welcomed the guests and participants. In his opening remarks during the inauguration of the workshop on 28th July, 2025, Prof. A.H. Moon highlighted the critical need for a proactive approach to disaster risk reduction in Jammu and Kashmir. He framed the region as a "disaster-inherited zone," citing major events such as the 2005 earthquake, the floods of 2014, and recurrent landslides in the Pir Panjal region. Prof. Moon stressed that technology must play a pivotal role in a new, forward-looking strategy. He called for the development of resilient infrastructure, improved data generation, and more accurate disaster prediction models. He noted that the newly established Centre for Disaster Risk Reduction (CDRR), with its specialized manpower and collaboration with the JKDMRRR, is well-positioned to lead these efforts and enhance the region's preparedness.

Ms. Snober Jameel detailed the importance of collaboration between government bodies and academic institutions like IUST. She emphasised that these partnerships are essential for detecting community needs, fostering sustainable development, and building a more resilient future for Jammu and Kashmir. J&K, which has endured the lasting effects of sudden disasters, must test the effectiveness of its government and the resilience of its communities. With disasters impacting global GDP by up to 14%, disaster-resilient infrastructure (DRI) has become critical worldwide. Ms. Jameel highlighted a significant shift in focus for the region, from a reactive approach a decade ago to a proactive Disaster Risk Reduction (DRR) strategy today. This new strategy includes climate change adaptation and "Build Back Better" principles, aligning with the Prime Minister's 10-Point Agenda to safeguard communities. The J&K government has initiated a widespread capacity-building effort for all stakeholders, and she noted that IUST's DRR initiatives are a vital part of this push.

Prof. Muzaffar Ahmad drew on scientific data and global examples to underscore the urgent need for enhanced preparedness in Jammu and Kashmir. He presented a stark comparison between the devastation in Haiti and the lesser impacts in Chile during the 2010 Haiti earthquake, highlighting that Chile's strong preparedness made all the difference. This, he argued, is a lesson for J&K. He noted that although national guidelines have improved in India, J&K has not done enough to implement them. He held up Bihar and Assam as states that successfully adapted the Sendai Framework by involving international scientists and creating a climate for multi-stakeholder collaboration. Prof. Ahmad asserted that similar initiatives are crucial for building true resilience in J&K. He also emphasized that resilience must be a community-wide effort. Dr. Ahmad proposed that involving IUST in updating the Jammu and Kashmir Disaster Management

(JKDM) plan would be a valuable step. He also pointed out the need for more effective enforcement of building codes, noting that even though bylaws have been amended, they are not being properly implemented. Finally, he stressed the importance of empowering communities with the knowledge to make their housing and other structures resilient to earthquakes.

In his keynote address, Prof. V.K. Gaur emphasized the significant seismic risks facing the Himalayan region, stressing that practical exercises and the creation of detailed hazard maps are essential. He highlighted the need for a dedicated agency to oversee the implementation of these maps. Prof. Gaur noted that a major challenge in India is the gap between scientific knowledge and its application in risk mapping and public awareness. He argued that while science today can accurately calculate seismic risk, a critical missing piece is understanding the full extent of ground acceleration, a crucial factor in developing resilient infrastructure. He cited the 2011 Japan earthquake, which was 500 times more intense than the 2005 Kashmir earthquake, as a powerful example of the effectiveness of resilient infrastructure. He attributed Japan’s success to a thorough understanding of ground properties, which informed engineering designs. While recent research has been conducted on Kashmir's seismology, Prof. Gaur concluded that much more work is needed to translate this scientific data into robust engineering designs.

In his address, Prof. Shakil Ahmad Romshoo emphasized the urgent need for resilient infrastructure in Jammu and Kashmir. He pointed out that despite the region's multi-hazard vulnerability, a "culture of disaster preparedness" is largely missing. Prof. Romshoo praised the collaboration between IUST and the J&K government, highlighting that the newly established Centre for Disaster Risk Reduction (CDRR) will play a vital role in enhancing stakeholder's capacity across the region. He referred to the devastating 2005 earthquake, which caused 80,000 deaths, and the time since the last major earthquake of 1555 in the Kashmir region to stress the importance of fostering a new culture of preparedness. He specifically addressed concerns regarding infrastructure types, noting that most buildings are made of mortar and masonry or reinforced concrete. Prof. Romshoo urged the creation of clear construction manuals for both public and private buildings and emphasized the need to enforce these standards. He wrapped up by announcing that IUST is developing a prototype of an energy-efficient, earthquake-resistant house, aiming to establish a new construction benchmark in the region.

In the subsequent technical session 1, Ms. Snober Jameel detailed the post-2005 paradigm shift in disaster management, moving from a reactive to a proactive model focused on prevention and preparedness. This new approach advocates for robust early warning systems, strict enforcement of building codes, proper drainage, and a strong emphasis on site identification and

risk assessment before any project begins. A core tenet of this shift is the mainstreaming of Disaster Risk Reduction (DRR) into all developmental projects through a "no harm" approach, ensuring that new initiatives do not increase vulnerability. While the Jammu and Kashmir Disaster Management Authority (JKDMA) provides essential guidelines, Ms. Jameel stressed that the actual implementation of these DRR initiatives, via bylaws, must be carried out by the relevant line departments.

In his session, Prof. Muzaffar Ahmad emphasized the critical importance of safeguarding essential facilities such as hospitals and power grids from earthquakes to maintain socio-economic continuity. He identified several key deficiencies in Jammu and Kashmir's current disaster management framework, including the absence of local-level Disaster Management (DM) plans, a lack of "Training of Trainers" (ToTs), and inadequate design and safety measures for critical infrastructure. Prof. Ahmad also pointed out the non-existence of emergency management protocols, emergency operation centers, and regular drills for staff, which are all vital for an effective response. To address these shortcomings and ensure the protection of critical infrastructure from earthquakes, he advocated for a multifaceted approach that includes retrofitting existing structures, raising public awareness, and adopting advanced technologies like base isolation systems to make a strong start.

In his concluding address, Prof. Gaur called for a new, innovative approach to disaster preparedness, emphasizing the need for measurable resilience goals and detailed, micro-level studies. He highlighted the importance of using computer-simulated modelling for real-time forecasting and developing advanced warning systems for events like hailstorms at a 500-meter scale, supported by effective public communication systems like MANET. Prof. Gaur defined resilience as the capacity of essential socio-economic systems to continue functioning during and after a disaster, stressing that a clear understanding of hazards and a robust assessment of current preparedness are crucial for effective mitigation. To catalyse resilience, he advocated for the creation of knowledge products and raised the critical question of how to secure the resilience of civil services. To this end, he proposed calculating ground acceleration at a micro-level across the region, providing specialized training for civil servants on seismic profiling, and equipping civil departments with instruments for site testing. Prof. Gaur also addressed flood vulnerability by suggesting the calculation of surface runoff and discharge, and he called for the development of hybrid communication systems for emergency response, such as VANET-based survival applications and MANET-based evacuation tools, suggesting that institutions like IUST could be funded to develop these systems. Ultimately, he underscored that community resilience must be a

top priority at every level.

The day ended with a productive open panel discussion that reinforced the themes of earlier sessions and identified specific areas for action. The panel and participants collectively agreed on the importance of a collaborative approach to risk assessment, hazard reduction, and building resilience. In response to a question about fault line identification, experts like Prof. Gaur and others recommended a combination of geological and geomorphological investigations, high-resolution seismic data, and digital elevation models (DEMs). A significant part of the discussion focused on the urgent issue of urban flooding and waterlogging in Srinagar and the Kashmir Valley. Experts linked this problem to multiple factors, including a 70% loss of wetlands, increasing impermeable surfaces, and the mismanagement and encroachment of drainage channels, some of which have been converted into roads. To address this, the panel suggested redesigning urban drainage systems based on a thorough understanding of topography, gradient, and natural hydrological patterns. They also recommended identifying suitable construction materials for urban surfaces to enhance permeability. The discussion ended with a consensus that blame should be set aside in favor of scientific assessments, collaborative planning, and evidence-based solutions to strengthen the resilience of critical infrastructure.

7.3. Proceedings of Day 2

The second day of the workshop on July 29, 2025, focused on the practical challenges and technical solutions for building resilient infrastructure. The sessions combined field expertise with scientific insights, providing a comprehensive view of the issues faced in Jammu and Kashmir. Er. Afzal Ahmad, a senior engineer, led the day with an insightful session on common field problems. He framed these challenges as opportunities for young engineers to grow and adapt. Er. Ahmad highlighted key technical lapses, such as improper reinforcement, incorrect water-cement ratios, and a dangerous over-reliance on software instead of foundational engineering principles. He also criticized the Detailed Project Report (DPR) process, noting that unrealistic deadlines often lead to inadequate surveys and environmental assessments. The persistent flooding at Lal Chowk was cited as a prime example of the consequences of poor planning, underscoring the need for proper drainage and urban water management. A major point of discussion was the bidding system, with Er. Ahmad arguing that awarding contracts based on the lowest cost (L1 system) compromises quality. He advocated for a shift to a merit-based (T1 system) to ensure long-lasting, high-quality infrastructure.

The day's technical sessions continued with Dr. Moazim Jan, a scientist from CSIR, who presented on the seismic vulnerability of Jammu and Kashmir. This was followed by a practical

demonstration of Rapid Visual Screening (RVS) by Dr. Midhat Fayaz. Dr. Fayaz explained the importance of RVS as a crucial tool for quickly assessing the structural risks and vulnerabilities of buildings. The day concluded with a visit to the Centre for Innovation and Entrepreneurship Development (CIED) at IUST, where participants had the opportunity to explore various construction materials in the High Ultra-Tech Laboratory. The visit offered a hands-on experience, bridging the gap between theoretical knowledge and practical applications in infrastructure development.

7.4. Proceedings of Day 3

The final day of the workshop on July 30, 2025, focused on the critical issue of seismic vulnerability in Kashmiri housing and explored innovative solutions for resilient construction. The day began with a technical presentation by Mr. Mehran Qureshi, who delivered a session on "Seismic Vulnerability of Traditional and Modern Housing Typologies in Kashmir." He highlighted that traditional timber-based vernacular architecture in Kashmir has historically demonstrated superior seismic performance compared to many modern Reinforced Cement Concrete (RCC) structures. Mr. Qureshi advocated for integrating key design principles of traditional construction, such as verticality, proportion, and craftsmanship, with modern technology. He suggested using machine learning and simulations to develop new hybrid construction techniques that are both innovative and earthquake-resilient.

A lively discussion followed, focusing on how to introduce green materials and establish a sustainable commercial forestry policy to ensure a steady supply of timber. Participants also discussed the importance of bridging technical innovations with state-level policy on land use and building regulations. The visit to the Structural, Construction Materials, and Geotechnical Laboratories in the Department of Civil Engineering at IUST also provided participants with valuable, hands-on experience with testing techniques and real-world applications of resilient design.

The panel discussion led by Prof. Shakil Ahmad Romshoo highlighted a multi-faceted approach to disaster risk reduction. The central theme was to create a more resilient society by focusing on several key areas, beginning with the strengthening of existing infrastructure. The first major takeaway was the need for better engineering practices to reinforce buildings and other structures. This includes not only modern techniques but also the incorporation of indigenous traditional knowledge that has proven its effectiveness over generations. Hand in hand with this is the importance of capacity building for artisans and engineers, ensuring they have the skills to implement these best practices. A second crucial point was the emphasis on public education and

awareness. The discussion underscored the need to enhance public awareness about potential hazards and promote disaster preparedness through education. This involves a community-wide effort to increase hazard consciousness and integrate community sensitization into our daily lives. Regular mock drills were also highlighted as a vital tool to ensure people are prepared and know how to react in an emergency. Finally, the discussion delved into strategic planning and policy implementation. This includes bridging the gap between research and society, ensuring that academic findings translate into practical actions on the ground. Key recommendations in this area were the implementation of government policies, specific planning for proper land use, and conducting seismic micro-zonation of the region to better understand and mitigate specific risks.

The workshop concluded with a formal valedictory session. The event included the distribution of certificates to all participants as a form of recognition. The proceedings were formally brought to a close with a vote of thanks proposed by Er. Aijaz Ahmad, the Head of the Civil Engineering Department. Er. Aijaz Ahmad praised the initiatives taken by JKDMRRR for their thoughtful work on awareness and capacity building. He also commended the leadership of IUST for establishing the crucial CDRR and for their efforts in reaching out to the stakeholders and collaborating with the government of Jammu and Kashmir.

7.5. Key Recommendations

Based on expert lectures, technical sessions, field demonstrations, and panel discussions, the following recommendations are proposed specifically to advance disaster-resilient infrastructure development in Jammu & Kashmir:

1. **Make hazard assessment mandatory before construction:** All infrastructure projects must undergo seismic, geotechnical, hydrological, and slope stability investigations before site finalisation and DPR approval.

2. **Implement seismic microzonation for design control:** Ward- and village-level seismic microzonation maps should be prepared and made compulsory reference documents for structural design approvals.

3. **Enforce earthquake-resistant design in all buildings:** No building—public or private—should be approved without compliance to BIS seismic codes and certified structural design.

4. **Introduce third-party structural vetting:** All major projects should undergo independent

structural review at design and construction stages.

5. **Prioritise the retrofitting of critical infrastructure:** Hospitals, schools, bridges, power stations, water supply systems, and government offices must be structurally audited and retrofitted on a priority basis.

6. **Scale up Rapid Visual Screening (RVS):** RVS should be conducted across urban centres to identify and rank vulnerable buildings for phased strengthening.

7. **Develop standard resilient housing prototypes:** IUST's earthquake-resistant, energy-efficient house model should be finalised and adopted as a reference design.

8. **Correct engineering deficiencies at the site level:** Strict control must be enforced on reinforcement detailing, water–cement ratios, curing practices, and material quality.

9. **Replace L1 tendering for critical infrastructure:** For bridges, hospitals, and lifeline structures, adopt quality-cum-cost (QCBS/T1) selection systems.

10. **Establish Emergency Operation Centres (EOCs):** District-level EOCs should be made operational for real-time infrastructure coordination during disasters.

11. **Train engineers and masons in resilient construction:** Mandatory hands-on training in seismic detailing, RVS, and site investigation should be institutionalised.

12. **Embed resilience in engineering education:** Disaster-resilient design must be compulsory in engineering and architecture curricula.

13. **Use simulation and modelling for design optimisation:** Ground acceleration modelling, site response analysis, and runoff simulation should guide structural and drainage design.

14. **Deploy early warning tools for infrastructure safety:** Install flood sensors, slope movement sensors, and weather-linked alert systems for critical assets.

15. **Frame sustainable timber supply policy:** Develop a regulated commercial forestry framework to support timber-based resilient construction.

16. **Link research directly with construction practice:** Research outputs from IUST and other institutions must be converted into design manuals and field guidelines.

17. **Create a DRI coordination mechanism:** JKDMRRR should host a dedicated Disaster-Resilient Infrastructure Coordination Cell for inter-departmental integration.

18. **Mandate periodic structural audits:** All major public buildings should undergo structural safety audits every 5 years.

19. **Fix accountability for design and construction lapses:** Clear responsibility must be assigned for code violations, design errors, and poor workmanship.

20. **Conduct regular mock drills for infrastructure systems:** Stress-testing of hospitals, bridges, power systems, and evacuation routes should be routine.

21. **Restrict construction in high-risk zones:** No new infrastructure should be allowed in fault zones, floodplains, unstable slopes, and reclaimed wetlands.

22. **Apply "Build Back Better" in reconstruction:** All post-disaster reconstruction must be structurally upgraded, not merely restored.

23. **Monitor resilience integration in projects:** Each infrastructure project must include a resilience compliance checklist monitored at the departmental level.

8. Feedback

Section 1: Content & Delivery:

Aspect	Avg. Rating	Insights
Objectives clarity	4.3	Clear goals, well aligned with participants' roles.
Content relevance	4.0	Strong applicability to civil engineering & DRR roles.
Presentation quality	4.3	High quality, but more visuals & local examples requested.
Organization & timing	3.9	Main weakness' sessions sometimes ran long or off-schedule.
Facilitators	4.4	Highly knowledgeable, but engagement dipped mid-workshop.
Interaction & participation	4.3	Improved toward the end; structured activities helped.
Practical examples	4.1	Valued but inconsistent across days; demand for local cases.
Demonstrations	4.2	RVS, visits to Ultratech & Civil Engineering Labs were major highlights.
Coordination/support	4.4	Strong logistical support was noted by participants.
Overall expectations met	4.2	Generally positive, but desire for deeper technical training.

Section 2: Participant Insights:

1. Skills & Knowledge Gained;

Participants reported acquiring practical and technical skills, including:

- Rapid Visual Screening (RVS) techniques,
- 3D printing applications for infrastructure prototyping,
- Hazard mapping methods,
- Retrofitting strategies for vulnerable structures,
- Material quality assessment and testing,
- Site selection and analysis principles,
- Identification and mitigation of corrosion issues,
- Disaster response planning frameworks,
- Knowledge of traditional construction methods,

2. Suggestions for Improvement;

- Increase hands-on and practical training components,
- Incorporate more visuals, local case studies, and site visits,
- Invite specialized technical experts such as structural engineers,

3. Identified Field Challenges;

- Poor material quality and recurring design flaws,
- Weak site selection practices and inadequate drainage management,
- Persistent corrosion and long-term durability concerns in infrastructure,

4. Future Topics Requested;

- Earthquake-resistant design for critical infrastructure,
- Retrofitting and strengthening techniques for existing buildings,
- Early warning systems and hazard monitoring technologies,

5. Key Gaps & Risks;

- Infrastructure vulnerability in J&K rated *poor* (1.8/5), urgent need for retrofitting and improved drainage systems,
- Community engagement requires stronger, grassroots-level strategies,
- Weak compliance with building codes and safety standards, demanding stricter enforcement mechanisms,

6. Recommended Actions;

- Develop J&K-specific Disaster Risk Reduction (DRR) training modules,
- Expand material testing laboratories and disaster simulation facilities,
- Make RVS a mandatory skill for local risk assessors,
- Introduce time-bound Q&A sessions and structured debates in training programs,
- Include local hazard case studies to enhance contextual relevance,
- Invite technical specialists for in-depth, topic-specific sessions,
- Create retrofitting toolkits and field operation manuals,
- Conduct community-based disaster drills for preparedness,

PHOTO GALLERY

Registration of Participants

Inaugural Session Presided by Prof. Shakil Ahmad Romshoo, HVC, IUST

Address by the Chief Guest Prof. V. K. Gaur, Honorary Emeritus Scientist, CSIR 4PI, Bangalore

Address by HVC, IUST, Prof. Shakil Ahmad Romshoo

Technical session, Day 1

Technical sessions, Day 2

Technical session, Day 3

Panel Discussion on "how to build a Disaster-Conscious society"

Valedictory Session and Certificate Distribution

Vote of thanks by Er. Mir Aijaz Ahmad, Head

Group Photograph