

Dear Readers,

We are pleased to share with you an edition covering varied topics. This edition has been guest-edited by Prof. Oinam Romanbabu Meetei.

Prof. Oinam Romanbabu Meetei is an Assistant Professor at the civil and environmental engineering department, Indian Institute of Technology (IIT) Guwahati. He is an active researcher in the area of seismic rehabilitation and retrofitting. Prof. Oinam has significant contribution in developing the resilient civil infrastructure of this nation. As part of his research, he developed low-cost, high efficient energy dissipation devices applicable to both concrete and steel structures. He is well-known in both academia and industry.

We hope you enjoy reading these papers, and we look forward to your valuable feedback on this edition.

Production Editor
Indian Concrete Journal



Dear Readers,

This edition covers seismic vulnerability assessment, new load transfer mechanism of tall buildings, development of sustainable construction material, and state of lightweight aggregate in the construction industry. Here is what the chosen four papers have to say.

Seismic vulnerability assessment is a process that involves evaluating and quantifying the potential vulnerability of a structure or infrastructure system to seismic hazards. The authors did an extensive investigation on 108 important buildings in the Mandi district of Himachal Pradesh which is located in the seismic zone – V. Based on this study, authors identified various vulnerability attributes on a structure like hill slope, insufficient seismic gap, set back problem, Plan and elevation irregularity etc. Also, the authors did a comparative study of three different rapid visual screening methods recommended by NDMA, Sreeerama, and FEMA P154.

In the next article, the authors highlight the importance of the new load transfer mechanism of tall buildings using transfer beams. In high-rise buildings, there are many discontinuous vertical elements, such as columns or structural walls, due to architectural demand. Transfer beams are used in such cases to maintain a proper load transfer mechanism. The authors investigate an eighteen-story building introducing a transfer beam under eleven selected ground motions. Further, they explore the advantages and disadvantages of attaching podiums to the buildings.

In the following article, two industry waste materials, ferrochrome ash (FCA) and air-cooled ferrochrome slag (ACFS) were introduced as alternative binding materials in concrete. The authors did experiments in various percentages combination

of FCA and ACFS in a concrete mix design and compared the result with conventional concrete mix. The load-carrying capacity of the proposed new material is comparatively better than that of conventional concrete. It also has advantages in terms of crack control with higher ductility. Authors highlighted the benefits of this study in terms of environmental pollution control as well as better structural concrete performance.

In the last article, the author extensively studied the fly ash lightweight aggregate in construction practice. The author reported that fly ash lightweight aggregate-based concrete has great potential for its application in construction to obtain benefits such as reduced dead load, improved thermal comfort, and reduced carbon footprint.

Hope this edition gives wide range of information on seismic vulnerability, new load transfer mechanisms of tall buildings, sustainable and eco-friendly material, and lightweight aggregate-based concrete in construction practice.

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Best regards,
Romanbabu Oinam