

عنوان مقاله:

Condition Assessment of Existing Concrete Building Using Non-Destructive Testing Methods for Effective Repair and Restoration-A Case Study

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نویسندگان:

Preethi Venkatesh - VNR Vignana Jyothi Institute of Engineering and Technology, Hyderabad, Telanagana-500090, India

Mallika Alapati - VNR Vignana Jyothi Institute of Engineering and Technology, Hyderabad, Telanagana-500090, India

خلاصه مقاله:

Buildings constructed during early 70's & late 80's of the last century in India are found to be in distressed conditions due to inadequate specifications and poor construction practices. The continuous monitoring of concrete structures using suitable NDT (Non Destructive Testing) methods and use of possible restoration methods help in a considerable reduction of the rate of deterioration of concrete structures thereby increasing the life span of structures. NDT methods have greater advantage in evaluating the uniformity, homogeneity, approximate compressive strength, durability, the extent of corrosion of rebars in concrete etc. of damaged structures. The objective of the present study is to enhance the life of 50 year old existing hospital building (Partly RC and Brick masonry) in Kurnool, Andhra Pradesh. Condition assessments are carried out through a visual, field and laboratory evaluation of samples collected from the structure and results are presented in this paper. The paper also highlights the assessment of strength and durability of concrete to evaluate the extent of distress and damage in the building. Besides visual inspection, the Non Destructive Evaluation covering UPV & Rebound Hammer values and Half Cell Potential with respect to the status of corrosion of reinforcing bars and chemical tests on selected un-distressed RC columns, beams, and slabs are also presented and discussed. The repair and strengthening techniques using the latest materials and possible restoration works such as column jacketing, shotcreting, anticorrosive coatings, etc. have been suggested to enhance the life of the structure.

کلمات کلیدی:

Distressed Condition; NDT Methods; Condition Assessment; Restoration Works

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