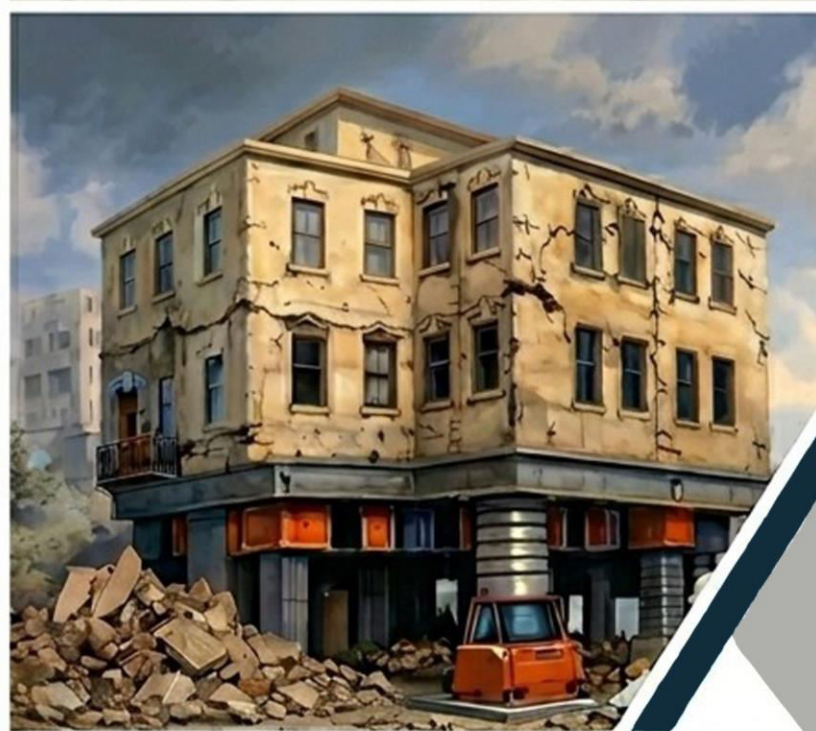
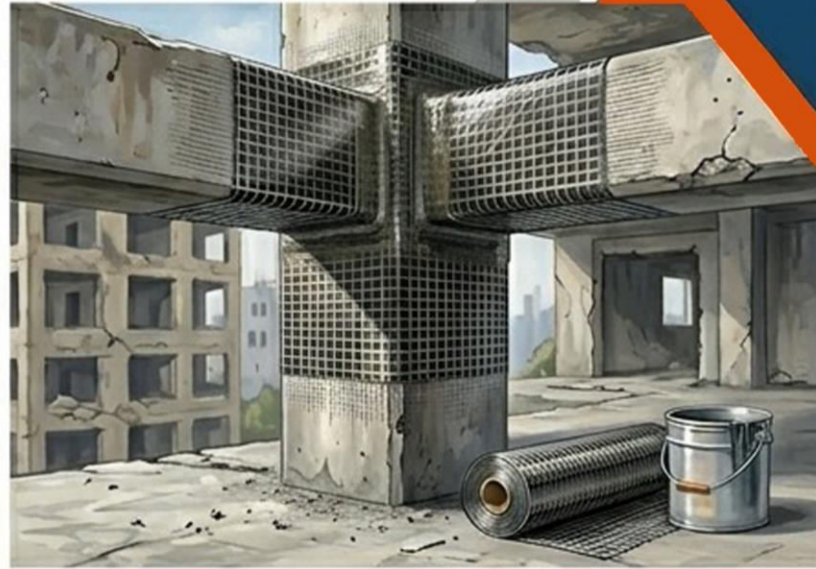


REPAIR, RETROFITTING AND REHABILITATION OF STRUCTURES

Principles, Materials, Techniques, and Case Studies

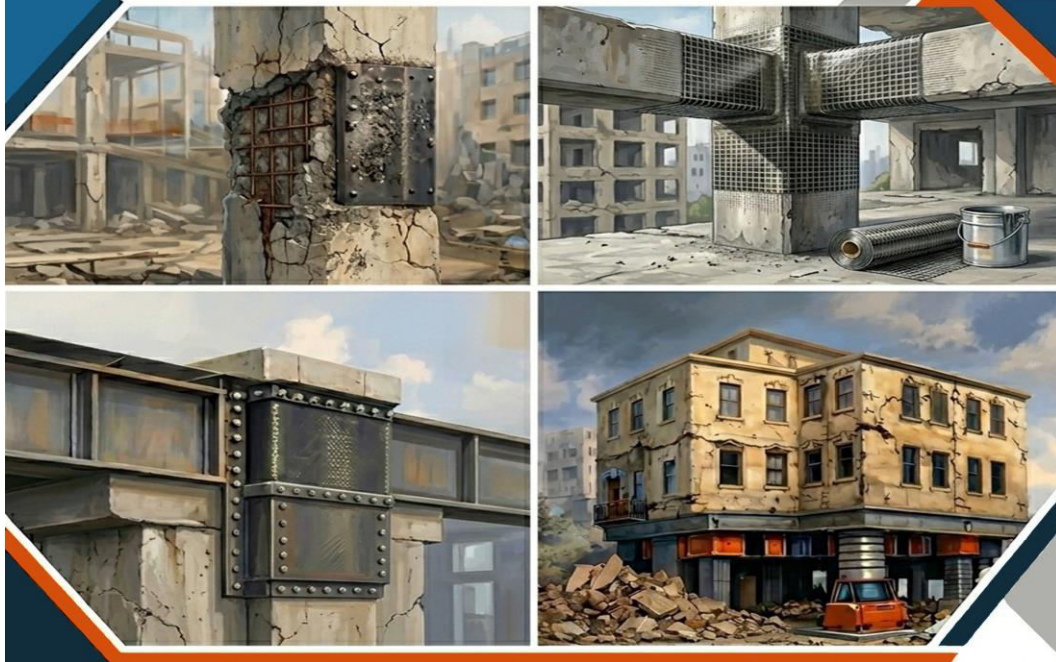


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REPAIR, RETROFITTING AND REHABILITATION OF STRUCTURES

Principles, Materials, Techniques, and Case Studies



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PREFACE

Dear Reader,

Repair, Retrofitting and Rehabilitation of Structures: Principles, Materials, Techniques, and Case Studies provides a comprehensive understanding of the methods used to assess, repair, and strengthen existing structures to ensure their safety, durability, and extended service life. With the increasing challenges of aging infrastructure, environmental deterioration, overloading, and natural hazards, the book explains the fundamental concepts of structural distress, deterioration mechanisms, and environmental effects on buildings and infrastructure. It covers modern techniques for condition assessment, including visual inspection, structural evaluation, and non-destructive testing methods, along with advanced repair materials such as polymer-modified mortars, epoxy systems, and fiber-reinforced composites. The book also discusses practical repair and strengthening techniques including crack repair, jacketing methods, FRP retrofitting, steel strengthening, and seismic retrofitting. Special attention is given to the rehabilitation of bridges, industrial structures, marine environments, and heritage buildings, along with relevant codes, sustainability considerations, and life-cycle perspectives. Combining theoretical concepts with practical examples and case studies, this book serves as a valuable resource for civil engineering students, researchers, practicing structural engineers, consultants, and infrastructure professionals.

Key Features of the Book • Covers repair, retrofitting, and rehabilitation concepts • Structural distress assessment and NDT techniques • Modern repair materials and strengthening methods • FRP and steel jacketing techniques • Case studies on various structures • Focus on sustainability and life-cycle analysis • Includes diagrams, examples, and case studies.

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About the Book

Repair, Retrofitting and Rehabilitation of Structures: Principles, Materials, Techniques, and Case Studies provides a comprehensive understanding of the methods used to assess, repair, and strengthen existing structures to ensure their safety, durability, and extended service life. With the increasing challenges of aging infrastructure, environmental deterioration, overloading, and natural hazards, the book explains the fundamental concepts of structural distress, deterioration mechanisms, and environmental effects on buildings and infrastructure. It covers modern techniques for condition assessment, including visual inspection, structural evaluation, and non-destructive testing methods, along with advanced repair materials such as polymer-modified mortars, epoxy systems, and fiber-reinforced composites. The book also discusses practical repair and strengthening techniques including crack repair, jacketing methods, FRP retrofitting, steel strengthening, and seismic retrofitting. Special attention is given to the rehabilitation of bridges, industrial structures, marine environments, and heritage buildings, along with relevant codes, sustainability considerations, and life-cycle perspectives. Combining theoretical concepts with practical examples and case studies, this book serves as a valuable resource for civil engineering students, researchers, practicing structural engineers, consultants, and infrastructure professionals.

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Repair, Retrofitting and Rehabilitation of Structures: Principles, Materials, Techniques, and Case Studies

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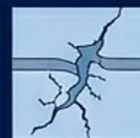
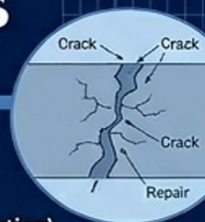
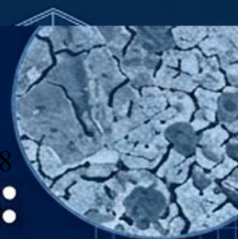
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