Seismic Design Of Building Structures

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Seismic Design of Reinforced Concrete Buildings Structural Load Determination: 2018 and 2021 IBC and ASCE/SEI
Seismic Design of Building Structures Seismic Design of Steel Structures Seismic Design of Buildings to
Eurocode 8 Seismic Design Solved Problems Earthquake Design Practice for Buildings Earthquake Engineering
Frontiers in the New Millennium Seismic Design of Reinforced and Precast Concrete Buildings Implications of
Recorded Earthquake Ground Motions on Seismic Design of Building Structures Performance-based Seismic Design
of Building Structures Minimum Design Loads for Buildings and Other Structures Seismic Design of Building
Structures Seismic Performance of Asymmetric Building Structures Nonlinear Seismic Analysis and Design of
Reinforced Concrete Buildings Earthquake-Resistant Structures Performance-Based Seismic Design of Concrete
Structures and Infrastructures Advanced Design Examples of Seismic Retrofit of Structures Seismic Design of
Building Structures Seismic Design of RC Buildings Seismic Architecture Seismic Design of Concrete Buildings to
Eurocode 8 Seismic Design of Reinforced Concrete and Masonry Buildings Seismic Design and Retrofit of Bridges
The Seismic Design Handbook Advanced Methods for Seismic Performance Evaluation of Building Structures Structural
Seismic Design Optimization and Earthquake Engineering: Formulations and Applications Handouts of the
International Training Programs for Seismic Design of Building Structures Approximate Methods in Structural Seismic
Design Earthquake Engineering for Structural Design Seismic Design Methods for Steel Building Structures
Seismic Design of Precast Concrete Buildings Seismic Design of Building Structures Seismic Design of Buildings
and Bridges Seismic Design of Building Structures Modal Analysis Methods in Seismic Design for Buildings
Seismic Design of Buildings Seismic Design of Building Structures Seismic Performance of Concrete Buildings
Seismic Design of Building Structures

* Presents the basics of seismic-resistant design of concrete structures. * Provides a major focus on the seismic
design of precast bracing systems. This Special Issue was created to collect the most recent and novel research on
seismic performance evaluation of building structures. This issue includes three important topics on seismic
engineering for building structures: (1) seismic design and performance evaluation, (2) structural dynamics, and (3)
seismic hazard and risk analysis. To protect building structures from earthquakes, it is necessary to conduct seismic
performance evaluations on structures with reliable methods and to retrofit these structures appropriately using the
results of the seismic performance evaluation. Calculate structural loads in compliance with the 2018 IBC® and ASCE/SEI 7-16. This practical guide shows, step by step, how to interpret and apply the load provisions contained in the 2018 IBC® and ASCE/SEI 7-16. You will learn how to accurately determine structural loads including dead loads, live loads, and environmental loads. Throughout the book, detailed design examples, unique flowcharts, and design aids illustrate the proper usage of the code within the scope of everyday practice. Coverage includes: • Structural load fundamentals • IBC® and ASCE 7 explanations • Load combinations • Dead, live, rain, and soil lateral loads • Snow and ice loads • Wind loads • Earthquake loads • Flood and tsunami loads • Load paths

The aim of this state-of-art report is to present current practices for use of precast and prestressed concrete in countries in seismic regions, to recommend good practice, and to discuss current developments. The report has been drafted by 30 contributors from nine different countries. This state-of-art report covers: state of the practice in various countries; advantages and disadvantages of incorporating precast reinforced and prestressed concrete in construction; lessons learned from previous earthquakes; construction concepts; design approaches; primary lateral load resisting systems (precast and prestressed concrete frame systems and structural walls including dual systems) diaphragms of precast and prestressed concrete floor units; modelling and analytical methods; gravity load resisting systems; foundations; and miscellaneous elements (shells, folded plates, stairs and architectural cladding panels). Design equations are reported where necessary, but the emphasis is on principles. Ordinary cast-in-place reinforced concrete is not considered in this report. This fib state-of-the-art report is intended to assist designers and constructors to provide safe and economical applications of structural precast concrete and at the same time to allow innovation in design and construction to continue. This Bulletin N° 27 was approved as an fib state-of-art report in autumn 2002 by fib Commission 7, Seismic design. Seismic Design of Building Structures provides a comprehensive introduction to core seismic concepts and principles, and offers essential background information for seismic problems on the California Special Civil Seismic Examination as well as other professional licensing exams. With thorough coverage of seismic building codes including the 2006 International Building Code (IBC), this book prepares you for conceptual and technical questions on structural analysis and code issues by giving you an understanding of earthquakes and their effects. Comprehensive introduction to seismic design. Over 30 example problems and 120 practice problems with step-by-step solutions. A thorough review of Seismic Building Codes. Easy-to-use formulas, figures, and tables. Detailed illustrations and definitions of seismic terminology. Perfect for the California Special Civil Seismic Examination NCEES Civil PE Examination NCEES Structural PE Examinations Architect Registration Examination (ARE). Topics Covered Include Basic Seismology Diaphragm Theory Earthquake Characteristics Effects of
Earthquakes on Structures General Structural Design Response of Structures Seismic Building Codes Seismic-Resistant Concrete Structures Seismic-Resistant Masonry Structures Seismic-Resistant Steel Structures Seismic-Resistant Wood Structures Special Design Features Tilt-Up Construction Vibration Theory Earthquake engineering is the ultimate challenge for structural engineers. Even if natural phenomena involve great uncertainties, structural engineers need to design buildings, bridges, and dams capable of resisting the destructive forces produced by them. These disasters have created a new awareness about the disaster preparedness and mitigation. Before a building, utility system, or transportation structure is built, engineers spend a great deal of time analyzing those structures to make sure they will perform reliably under seismic and other loads. The purpose of this book is to provide structural engineers with tools and information to improve current building and bridge design and construction practices and enhance their sustainability during and after seismic events. In this book, Khan explains the latest theory, design applications and Code Provisions. Earthquake-Resistant Structures features seismic design and retrofitting techniques for low and high raise buildings, single and multi-span bridges, dams and nuclear facilities. The author also compares and contrasts various seismic resistant techniques in USA, Russia, Japan, Turkey, India, China, New Zealand, and Pakistan. Written by a world renowned author and educator Seismic design and retrofitting techniques for all structures Tools improve current building and bridge designs Latest methods for building earthquake-resistant structures Combines physical and geophysical science with structural engineering Seismic Performance of Asymmetric Building Structures presents detailed investigations on the effective assessment of structural seismic response under excessive torsional vibrations, demonstrating behavioural aspects from local response perspective to global seismic demands. The work provides comprehensive analytical, computational, experimental investigations, and proposes improved design guidelines that structural engineers can utilize to enhance the seismic design of asymmetric building structures. Combining extensive experimental and numerical data stock for seismic performance assessment with a particular focus on asymmetric building structures, the book includes: • An overview of asymmetric building structures from seismic damage perspective • Local and global performance assessment of asymmetric structures under extreme seismic actions • Post-earthquake damage evaluation from varying frequency trends • Extended numerical applications for experimental response validations • Evaluation of critical regions of asymmetric structure with stress concentration • Statistical distribution of seismic response under varying design parameters • Design guidelines for asymmetric building structures This work's comprehensive evaluations are carried out with modern sensing techniques planned with meticulous attention to cover objectives with a particular focus on asymmetry in reinforced concrete and steel structures. It assesses various aspects of asymmetric building
structures that are rarely dealt with in the current literature. It gathers fruitful information from various building design codes and explains their limitations in addressing damage-related challenges, which is not only useful for practicing engineers but also for academics. The book will be invaluable for experts, researchers, students and practitioners from relevant areas, as well as for emergency preparedness managers. Solid design and craftsmanship are a necessity for structures and infrastructures that must stand up to natural disasters on a regular basis. Continuous research developments in the engineering field are imperative for sustaining buildings against the threat of earthquakes and other natural disasters. Performance-Based Seismic Design of Concrete Structures and Infrastructures is an informative reference source on all the latest trends and emerging data associated with structural design. Highlighting key topics such as seismic assessments, shear wall structures, and infrastructure resilience, this is an ideal resource for all academicians, students, professionals, and researchers that are seeking new knowledge on the best methods and techniques for designing solid structural designs. Earthquake Design Practice for Buildings, 3rd edition provides comprehensive, practical and easy to read advice for all engineers, designers and analysts of earthquake resistant structures. This new edition has been completely revised to account for the many developments that had taken place since the publication of the bestselling second edition. This book focuses on the seismic design of building structures and their foundations to Eurocode 8. It covers the principles of seismic design in a clear but brief manner and then links these concepts to the provisions of Eurocode 8. It addresses the fundamental concepts related to seismic hazard, ground motion models, basic dynamics, seismic analysis, siting considerations, structural layout, and design philosophies, then leads to the specifics of Eurocode 8. Code procedures are applied with the aid of walk-through design examples which, where possible, deal with a common case study in most chapters. As well as an update throughout, this second edition incorporates three new and topical chapters dedicated to specific seismic design aspects of timber buildings and masonry structures, as well as base-isolation and supplemental damping. There is renewed interest in the use of sustainable timber buildings, and masonry structures still represent a popular choice in many areas. Moreover, seismic isolation and supplemental damping can offer low-damage solutions which are being increasingly considered in practice. The book stems primarily from practical short courses on seismic design which have been run over a number of years and through the development Eurocode 8. The contributors to this book are either specialist academics with significant consulting experience in seismic design, or leading practitioners who are actively engaged in large projects in seismic areas. This experience has provided significant insight into important areas in which guidance is required. This book examines and presents essential aspects of the behavior, analysis, design and detailing of
reinforced concrete buildings subjected to strong seismic activity. Seismic design is an extremely complex problem that has seen spectacular development in the last decades. The present volume tries to show how the principles and methods of earthquake-resistant design have occurred over the last several years. Civil engineers need an authoritative source of information that reflects the issues that are unique to the field. Comprising chapters selected from the second edition of the best-selling Handbook of Structural Engineering, Earthquake Engineering Examples of Seismic Retrofit of Structures provides insights on the problems associated with the seismic retrofitting of existing structures. The authors present various international case studies of seismic retrofitting projects and the different possible strategies on how to handle complex problems encountered. Users will find tactics on a variety of problems that are commonly faced, including problems faced by engineers and authorities who have little or no experience in the practice of seismic retrofitting. Provides several examples of retrofitting projects that cover different structural systems, from non-engineered houses, to frame buildings. Presents various retrofitting methods through examples. Provides detailed, step-by-step design procedures for each example. Includes real retrofit projects with photos of the details of various retrofitting techniques. Contains several modeling details and hints making use of various software in this area. This book is intended to serve as a textbook for engineering courses on earthquake resistant design. The book covers important attributes for seismic design such as material properties, damping, ductility, stiffness and strength. The subject coverage commences with simple concepts and proceeds right up to nonlinear analysis and push-over method for checking building adequacy. The book also provides an insight into the design of base isolators highlighting their merits and demerits. Apart from the theoretical approach to design of multi-storey buildings, the book highlights the care required in practical design and construction of various building components. It covers modal analysis in depth including the important missing mass method of analysis and tension shift in shear walls and beams. These have important bearing on reinforcement detailing. Detailed design and construction features are covered for earthquake resistant design of reinforced concrete as well as confined and reinforced masonry structures. The book also provides the methodology for assessment of seismic forces on basement walls and pile foundations. It provides a practical approach to design and detailing of soft storeys, short columns, vulnerable staircases and many other components. The book bridges the gap between design and construction. Plenty of worked illustrative examples are provided to aid learning. This book will be of value to upper undergraduate and graduate students taking courses on seismic design of structures. This report is the first step in preparing a change to the tri-services manual TM 5-809-10, Seismic Design for Buildings. Changes in this manual are necessary to provide guidance for the design of critical military facilities which must
remain functional after subjection to strong earthquakes. This report describes and discusses modal analysis methods used in the dynamic analysis of structures in conjunction with the earthquake response spectra and time history methods. Elastic and inelastic conditions are discussed, as well as structural damping and assumptions and limitations of the methods. Example calculations are included. (Author). An Original Source of Expressions and Tools for the Design of Concrete Elements with Eurocode Seismic design of concrete buildings needs to be performed to a strong and recognized standard. Eurocode 8 was introduced recently in the 30 countries belonging to CEN, as part of the suite of Structural Eurocodes, and it represents the first European Standard for seismic design. It is also having an impact on seismic design standards in countries outside Europe and will be applied there for the design of important facilities. This book: Contains the fundamentals of earthquakes and their effects at the ground level, as these are affected by local soil conditions, with particular reference to EC8 rules Provides guidance for the conceptual design of concrete buildings and their foundations for earthquake resistance Overviews and exemplifies linear and nonlinear seismic analysis of concrete buildings for design to EC8 and their modelling Presents the application of the design verifications, member dimensioning and detailing rules of EC8 for concrete buildings, including their foundations Serves as a commentary of the parts of EC8 relevant to concrete buildings and their foundations, supplementing them and explaining their proper application Seismic Design of Concrete Buildings to Eurocode 8 suits graduate or advanced undergraduate students, instructors running courses on seismic design and practicing engineers interested in the sound application of EC8 to concrete buildings. Alongside simpler examples for analysis and detailed design, it includes a comprehensive case study of the conceptual design, analysis and detailed design of a realistic building with six stories above grade and two basements, with a complete structural system of walls and frames. Homework problems are given at the end of some of the chapters. Provides both a general treatment of fundamental concepts and issues and illustrations of the design of typical earthquake-resistant structures based on the requirements of the Uniform Building Code. Emphasizes the practical concerns of the building designer as well as basic grounding in the fundamentals. Emphasizes the significance of various factors in design, such as choice of materials, type of structure, details of construction, building planning, and spatial arrangement. Providing real world applications for different structural types and seismic characteristics, Seismic Design of Steel Structures combines knowledge of seismic behavior of steel structures with the principles of earthquake engineering. This book focuses on seismic design, and concentrates specifically on seismic-resistant steel structures. Drawing on experience from the Northridge to the Tohoku earthquakes, it combines understanding of the seismic behavior of steel structures with the principles of earthquake engineering. The book focuses on the
global as well as local behavior of steel structures and their effective seismic-resistant design. It recognizes different
types of earthquakes, takes into account the especial danger of fire after earthquake, and proposes new bracing and
connecting systems for new seismic resistant steel structures, and also for upgrading existing reinforced concrete
structures. Includes the results of the extensive use of the DUCTROCT M computer program, which is used for the
evaluation of the seismic available ductility, both monotonic and cyclic, for different types of earthquakes
Demonstrates good design principles by highlighting the behavior of seismic-resistant steel structures in many
applications from around the world Provides a methodological approach, making a clear distinction between strong
and low-to-moderate seismic regions This book serves as a reference for structural engineers involved in seismic
design, as well as researchers and graduate students of seismic structural analysis and design. This book examines
the recent developments in computerized structural analysis and finite element analysis to re-appraise existing
approximate techniques and to define their scope and limits more accurately. The book proposes new techniques
and provides many numerical examples and comparisons with 'accurate' methods. Solid review of seismic design
exam topics- More than 100 practice problems- Includes step-by-step solutions Copyright © Libri GmbH. All rights
reserved. Everything you need to pass the test! Seismic Design of Buildings and Bridges: 2002-2003 Edition by Alan
Williams, Ph.D., S.E., C. Eng., a leading structural engineering author · Written for civil and structural engineers
preparing for the: Special Civil Engineering Exam--California National Structural Engineering I and II Exams California
Structural Engineering Exam · Includes more than 100 problems and step-by-step solutions from recent exams ·
Offers 18 HP-48G calculator programs for frequently occurring calculations in the appendix · Contains an 8-page
summary of useful equations · Reflects current publications of SEAOC and FEMA · Conforms to the 1997 edition of
the UBC · Updated based on the latest AISC and ACI standards · Provides comprehensive clarification of applicable
Building Codes and Standard Specifications · Uses provisions of the 1999 SEAOC bluebook, 1999 FEMA Advisory No.
2, 2000 FEMA 350 Design of Steel Moment Frame Buildings, and 1997 AISC Seismic Provisions · Cites extensive
reference publications that reflect current design procedures Other Engineering Resources Available from Oxford
University Press For the PE Exams Civil Engineering License Review, Fourteenth Edition, Donald G. Newnan, P.E.
(1-57645-029-5) Civil Engineering: Problems and Solutions, Fourteenth Edition, Donald G. Newnan, P.E.
(1-57645-038-4) Structural Engineering License Review, Problems and Solutions, 2002-2003 Edition, Alan Williams,
Civil Engineering: Bridge Structures, Alan Williams, S.E. (1-57645-041-4) Civil Engineering: Building Structures, Alan
Throughout the past few years, there has been extensive research done on structural design in terms of optimization methods or problem formulation. But, much of this attention has been on the linear elastic structural behavior, under static loading condition. Such a focus has left researchers scratching their heads as it has led to vulnerable structural configurations. What researchers have left out of the equation is the element of seismic loading. It is essential for researchers to take this into account in order to develop earthquake resistant real-world structures. Structural Seismic Design Optimization and Earthquake Engineering: Formulations and Applications focuses on the research around earthquake engineering, in particular, the field of implementation of optimization algorithms in earthquake engineering problems. Topics discussed within this book include, but are not limited to, simulation issues for the accurate prediction of the seismic response of structures, design optimization procedures, soft computing applications, and other important advancements in seismic analysis and design where optimization algorithms can be implemented. Readers will discover that this book provides relevant theoretical frameworks in order to enhance their learning on earthquake engineering as it deals with the latest research findings and their practical implementations, as well as new formulations and solutions. The book, after two introductory chapters on seismic design principles and structural seismic analysis methods, proceeds with the detailed description of seismic design methods for steel building structures. These methods include all the well-known methods, like force-based or displacement-based methods, plus some other methods developed by the present authors or other authors that have reached a level of maturity and are applicable to a large class of steel building structures. For every method, detailed practical examples and supporting references are provided in order to illustrate the methods and demonstrate their merits. As a unique feature, the present book describes not just one, as it is the case with existing books on seismic design of steel structures, but various seismic design methods including...
application examples worked in detail. The book is a valuable source of information, not only for MS and PhD
students, but also for researchers and practicing engineers engaged with the design of steel building structures. This
volume comprises papers presented at the China-US Millennium Symposium on Earthquake Engineering, held in
Beijing, China, on November 8-11, 2000. This conference provides a forum for advancing the field of earthquake
engineering through multi-lateral cooperation. This is arguably the most comprehensive book on the subject of
architectural-structural design decisions that influence the seismic performance of buildings. It explores the
intersection between the architecture and the structural design through the lens of earthquake engineering. The main
aim of this unique book, written by renowned engineer M. Llunji, is to explain in the simplest terms, the architecture
and structure of earthquake-resistant buildings, using many practical examples and case studies to demonstrate the
fact that structures and buildings react to earthquake forces mainly according to their form, configuration and
material. The purpose of this book is to introduce a new perspective on seismic design, a more visual, conceptual and
architectural one, to both architects and engineers. In a word, it is to introduce architectural opportunities for
earthquake resistant buildings, treating seismic design as a central architectural issue. A non-mathematical and
practical approach emphasizing graphical presentation of problems and solutions makes it equally accessible to
architectural and engineering professionals. The book will be invaluable for practicing engineers, architects, students
and researchers. More than 500 illustrations/photographs and numerous case studies. Seismic Architecture covers:
- Earthquake effects on structures
- Seismic force resisting systems
- Advanced systems for seismic protection
- Architectural/structural configuration and its influence on seismic response
- Contemporary architecture in seismic regions
- Seismic response of nonstructural elements
- Seismic retrofit and rehabilitation of existing buildings
- Seismic architecture.

Because of their structural simplicity, bridges tend to be particularly vulnerable to damage and even collapse when subjected to earthquakes or other forms of seismic activity. Recent earthquakes, such as the ones in Kobe, Japan, and Oakland, California, have led to a heightened awareness of seismic risk and have revolutionized bridge design and retrofit philosophies. In Seismic Design and Retrofit of Bridges, three of the world's top authorities on the subject have collaborated to produce the most exhaustive reference on seismic bridge design currently available. Following a detailed examination of the seismic effects of actual earthquakes on local area bridges, the authors demonstrate design strategies that will make these and similar structures optimally resistant to the damaging effects of future seismic disturbances. Relying heavily on worldwide research associated with recent earthquakes, Seismic Design and Retrofit of Bridges begins with an in-depth treatment of seismic design philosophy as it applies to bridges. The authors then describe the various geotechnical considerations specific to bridge design, such as soil-
structure interaction and traveling wave effects. Subsequent chapters cover conceptual and actual design of various bridge superstructures, and modeling and analysis of these structures. As the basis for their design strategies, the authors' focus is on the widely accepted capacity design approach, in which particularly vulnerable locations of potentially inelastic flexural deformation are identified and strengthened to accommodate a greater degree of stress. The text illustrates how accurate application of the capacity design philosophy to the design of new bridges results in structures that can be expected to survive most earthquakes with only minor, repairable damage. Because the majority of today's bridges were built before the capacity design approach was understood, the authors also devote several chapters to the seismic assessment of existing bridges, with the aim of designing and implementing retrofit measures to protect them against the damaging effects of future earthquakes. These retrofitting techniques, though not considered appropriate in the design of new bridges, are given considerable emphasis, since they currently offer the best solution for the preservation of these vital and often historically valued thoroughfares.

Practical and applications-oriented, Seismic Design and Retrofit of Bridges is enhanced with over 300 photos and line drawings to illustrate key concepts and detailed design procedures. As the only text currently available on the vital topic of seismic bridge design, it provides an indispensable reference for civil, structural, and geotechnical engineers, as well as students in unrelated engineering courses. A state-of-the-art text on earthquake-proof design and retrofit of bridges, Seismic Design and Retrofit of Bridges fills the urgent need for a comprehensive and up-to-date text on seismic-ally resistant bridge design. The authors, all recognized leaders in the field, systematically cover all aspects of bridge design related to seismic resistance for both new and existing bridges. * A complete overview of current design philosophy for bridges, with related seismic and geotechnical considerations * Coverage of conceptual design constraints and their relationship to current design alternatives * Modeling and analysis of bridge structures * An exhaustive look at common building materials and their response to seismic activity * A hands-on approach to the capacity design process * Use of isolation and dissipation devices in bridge design * Important coverage of seismic assessment and retrofit design of existing bridges * Complete coverage of earthquake-resistant concrete building design Written by a renowned seismic engineering expert, this authoritative resource discusses the theory and practice for the design and evaluation of earthquake-resistant reinforced concrete buildings. The book addresses the behavior of reinforced concrete materials, components, and systems subjected to routine and extreme loads, with an emphasis on response to earthquake loading. Design methods, both at a basic level as required by current building codes and at an advanced level needed for special problems such as seismic performance assessment, are described. Data and models useful for analyzing reinforced concrete structures as well as numerous illustrations,
tables, and equations are included in this detailed reference. Seismic Design of Reinforced Concrete Buildings covers: Seismic design and performance verification, Steel reinforcement, Concrete confinement, concrete Axially loaded members, Moment and axial force, Shear in beams, columns, and walls, Development and anchorage, Beam-column connections, Slab-column and slab-wall connections, Seismic design overview, Special moment frames, Special structural walls, Gravity framing, Diaphragms and collectors, Foundations. Forty scientists working in 13 different countries detail in this work the most recent advances in seismic design and performance assessment of reinforced concrete buildings. It is a valuable contribution in the mitigation of natural disasters. Emphasizes actual structural design, not analysis, of multistory buildings for seismic resistance. Strong emphasis is placed on specific detailing requirements for construction. Fundamental design principles are presented to create buildings that respond to a wide range of potential seismic forces, which are illustrated by numerous detailed examples. The discussion includes the design of reinforced concrete ductile frames, structural walls, dual systems, reinforced masonry structures, buildings with restricted ductility, and foundation walls. In addition to the examples, full design calculations are given for three prototype structures. "...has been updated to conform to the 2009 International Building Code (IBC), the 2008 Building Code Requirements for Structural Concrete (ACI 318) and the 208 Building Code Requirements for Masonry Structures (ACI 530)". Preface. This handbook contains up-to-date existing structures, computer applications, and information on planning, analysis, and design seismic design of wood structures. A new and very useful feature of this edition of earthquake-resistant building structures. Its intention is to provide engineers, architects, is the inclusion of a companion CD-ROM disc developers, and students of structural containing the complete digital version of the handbook itself and the following very engineering and architecture with authoritative, yet practical, design information. It represents important publications: an attempt to bridge the persisting gap between I. UBC-IBC (1997-2000) Structural advances in the theories and concepts of Comparisons and Cross References, ICBO, earthquake-resistant design and their 2000. implementation in seismic design practice. 2. NEHRP Guidelines for the Seismic The distinguished panel of contributors is Rehabilitation of Buildings, FEMA-273, Federal Emergency Management Agency, composed of 22 experts from industry and universities, recognized for their knowledge and 1997. extensive practical experience in their fields. 3. NEHRP Commentary on the Guidelines for They have aimed present clearly and the Seismic Rehabilitation of Buildings, FEMA-274, Federal Emergency concisely the basic principles and procedures pertinent to each subject and to illustrate with Management Agency, 1997. practical examples the application of these 4. NEHRP Recommended Provisions for principles and procedures in seismic design Seismic Regulations for New Buildings and practice. Where applicable, the provisions of Older Structures,

NEW TWELFTH EDITION AVAILABLE

Seismic Design of Building Structures presents the seismic design concepts most essential to engineers, architects, and students of civil and structural engineering, and architecture. The book's 15 chapters provide a concise but thorough review of seismic theory, code application, design principles, and structural analysis. The 30 example problems demonstrate how to apply concepts, codes, and equations to solve realistic problems. More than 125 practice problems provide opportunities for independent problem-solving practice, and complete solutions allow you to check your solution approach. This book includes two comprehensive indexes—one of key terms and another of seismic building codes—to quickly direct you to the information you are looking for. You can also locate related support material by following references throughout the text to the 150 equations, 29 tables, 144 figures, and 16 appendices, and to relevant codes and standards.

Topics Covered:
- Basic Seismology
- Details of Seismic-Resistant Structures (Concrete, Masonry, Steel, Wood)
- Diaphragm Theory
- Earthquake Characteristics
- Effects of Earthquakes on Structures
- General Structural Design
- Response of Structures
- Seismic Building Code
- Special Design Features
- Tilt-Up Construction
- Vibration Theory

Referenced Codes and Standards:
- ACI 318
- ACI 530
- AISC 341
- AISC 360
- ASCE/SEI7
- IBC
- NDS
- SDPW

An Introduction to Seismic Design for the California Civil Seismic exam
California Structural Engineer Seismic exam
Civil PE exam Structural Engineering (SE) exam
Architect Registration Examination (ARE)

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