SEISMIC ISOLATION FOR DESIGNERS AND STRUCTURAL ENGINEERS

LIMIT STATE DESIGN IN STRUCTURAL STEELCOMPUTER AIDED OPTIMAL DESIGN: STRUCTURAL AND MECHANICAL SYSTEMSLIMIT STATES DESIGN OF STRUCTURAL STEELWORKSTRUCTURAL DESIGN OF BUILDINGS COMPARATIVE DESIGN OF STRUCTURES CONCEPTUAL STRUCTURAL DESIGN THE DESIGN OF BUILDING STRUCTURESSTRUCTURAL DESIGN OF BUILDINGSELEMENTARY STRUCTURAL ANALYSIS AND DESIGN OF BUILDINGSDESIGN SOLUTIONS FOR NZEB RETROFIT BUILDINGSINTEGRATED LIFE CYCLE DESIGN OF STRUCTURES DURABILITY DESIGN OF CONCRETE STRUCTURES SEISMIC BEHAVIOUR AND DESIGN OF IRREGULAR AND COMPLEX CIVIL STRUCTURESDESIGN OF MODERN HIGHRISE REINFORCED CONCRETE STRUCTURESADVANCES IN DESIGN OPTIMIZATIONSTRUCTURAL DESIGNNEW STONE TECHNOLOGY, DESIGN, AND CONSTRUCTION FOR EXTERIOR WALL SYSTEMSSMOOTH TOPOLOGICAL DESIGN OF CONTINUUM STRUCTURESULTIMATE LIMIT STATE DESIGN OF STEEL-PLATED STRUCTURES CROSSING DESIGN BOUNDARIES M. R. SHIYEKAR CARLOS A. MOTA SOARES DAVID NETHERCOT FENG FU SHAOPEI LIN OLGA POPOVIC LARSEN WOLFGANG SCHUELLER Paul Smith Dominick Pilla Rynska, Elzbieta Asko Sarja A. Sarja Oren Lavan Hiroyuki Aoyama H. ADELI JAMES R. UNDERWOOD BARRY DONALDSON YUN-FEI FU JEOM KEE PAIK PAUL RODGERS LIMIT STATE DESIGN IN STRUCTURAL STEEL COMPUTER AIDED OPTIMAL DESIGN: STRUCTURAL AND MECHANICAL SYSTEMS LIMIT STATES DESIGN OF STRUCTURAL STEELWORK STRUCTURAL DESIGN OF BUILDINGS COMPARATIVE DESIGN OF STRUCTURES CONCEPTUAL STRUCTURAL DESIGN THE DESIGN OF BUILDING STRUCTURES STRUCTURAL DESIGN OF BUILDINGS ELEMENTARY STRUCTURAL ANALYSIS AND DESIGN OF BUILDINGS DESIGN SOLUTIONS FOR NZEB RETROFIT BUILDINGS INTEGRATED LIFE CYCLE DESIGN OF STRUCTURES DURABILITY DESIGN OF CONCRETE STRUCTURES SEISMIC BEHAVIOUR AND DESIGN OF IRREGULAR AND COMPLEX CIVIL STRUCTURES DESIGN OF MODERN HIGHRISE REINFORCED CONCRETE STRUCTURES ADVANCES IN DESIGN OPTIMIZATION STRUCTURAL DESIGN NEW STONE TECHNOLOGY, DESIGN, AND CONSTRUCTION FOR EXTERIOR WALL SYSTEMS SMOOTH TOPOLOGICAL DESIGN OF CONTINUUM

STRUCTURES ULTIMATE LIMIT STATE DESIGN OF STEEL-PLATED STRUCTURES CROSSING DESIGN BOUNDARIES

M. R. SHIYEKAR CARLOS A. MOTA SOARES DAVID NETHERCOT FENG FU SHAOPEI LIN OLGA POPOVIC

LARSEN WOLFGANG SCHUELLER PAUL SMITH DOMINICK PILLA RYNSKA, ELZBIETA ASKO SARJA A. SARJA

OREN LAVAN HIROYUKI AOYAMA H. ADELI JAMES R. UNDERWOOD BARRY DONALDSON YUN-FEI FU JEOM

KEE PAIK PAUL RODGERS

THE SECOND EDITION HAS INCORPORATED ALL THE REVISIONS NECESSITATED AFTER THE ISSUE OF AMENDMENT NO 1 OF JANUARY 2012 TO IS 800 2007 THE BOOK IS PRIMARILY DESIGNED FOR THE STUDENTS OF CIVIL STRUCTURAL ENGINEERING AT ALL LEVELS OF STUDIES UNDERGRADUATE POSTGRADUATE AND DIPLOMA AS WELL AS FOR THE PROFESSIONALS IN THE FIELD OF STRUCTURAL STEEL DESIGN IT COVERS THE FUNDAMENTAL CONCEPTS OF STEEL DESIGN IN THE PERSPECTIVE OF THE LIMIT STATE DESIGN CONCEPT AS PER IS 800 2007 WITH THE FOCUS ON COST EFFECTIVE DESIGN OF INDUSTRIAL STRUCTURES FOOT BRIDGES PORTAL FRAMES AND PRE ENGINEERED BUILDINGS THE CONNECTION DESIGN DETAILS ARE DISCUSSED CONCURRENTLY WITH THE DESIGN OF MEMBERS THE BOOK COVERS THE SUBJECT MATTER WITH THE HELP OF NUMEROUS PRACTICAL ILLUSTRATIONS ACCOMPANIED BY STEP BY STEP DESIGN CALCULATIONS AND DETAIL ING IN 14 CHAPTERS INCLUDING A CHAPTER ON PRE ENGINEERED BUILDINGS SOLVED EXAMPLES AS WELL AS EXERCISES ARE PROVIDED IN EACH CHAPTER TO ENABLE THE DEVELOPMENT OF A STRONG UNDERSTANDING OF THE UNDERLYING CONCEPTS AND FOR TESTING THE COMPREHENSION ACQUIRED BY THE STUDENTS THE GEOMETRICAL PROPERTIES OF ROLLED STEEL SECTIONS OFTEN REQUIRED AS PER THE REVISED CLAUSES OF IS 800 2007 AND NOT APPEARING IN THE EXISTING STEEL TABLES ARE GIVEN IN THE APPENDIX A FOR READY REFERENCE

THIS BOOK CONTAINS THE EDITED VERSION OF LECTURES AND SELECTED PAPERS PRESENTED AT THE NATO ADVANCED STUDY INSTITUTE ON COMPUTER AIDED OPTIMAL DESIGN STRUCTURAL AND MECHANICAL SYSTEMS HELD IN TRÓIA PORTUGAL 29TH JUNE TO 11TH JULY 1986 AND ORGANIZED BY CEMUL CENTER OF MECHANICS AND MATERIALS OF THE TECHNICAL UNIVERSITY OF LISBON THE INSTITUTE WAS ATTENDED BY 120 PARTICIPANTS FROM 21 COUNTRIES INCLUDING LEADING SCIENTISTS AND ENGINEERS FROM UNIVERSITIES RESEARCH INSTITUTIONS AND INDUSTRY AND PH D STUDENTS SOME PARTICIPANTS PRESENTED INVITED AND CONTRIBUTED PAPERS DURING THE INSTITUTE AND ALMOST ALL PARTICIPATED ACTIVELY IN DISCUSSIONS ON

SCIENTIFIC ASPECTS DURING THE INSTITUTE THE ADVANCED STUDY INSTITUTE PROVIDED A FORUM FOR INTERACTION AMONG EMINENT SCIENTISTS AND ENGINEERS FROM DIFFERENT SCHOOLS OF THOUGHT AND YOUNG RESEACHERS THE INSTITUTE ADDRESSED THE FOUNDATIONS AND CURRENT STATE OF THE ART OF ESSENTIAL TECHNIQUES RELATED TO COMPUTER AIDED OPTIMAL DESIGN OF STRUCTURAL AND MECHANICAL SYSTEMS NAMELY VARI ATIONAL AND FINITE ELEMENT METHODS IN OPTIMAL DESIGN NUMERICAL OPTIMIZATION TECHNIQUES DESIGN SENSITIVITY ANALYSIS SHAPE OPTIMAL DESIGN ADAPTIVE FINITE ELEMENT METHODS IN SHAPE OPTIMIZATION CAD TECHNOLOGY SOFTWARE DEVELOPMENT TECHNIQUES INTEGRATED COMPUTER AIDED DESIGN AND KNOWLEDGE BASED SYSTEMS SPECIAL TOPICS OF GROWING IMPORTANCE WERE ALSO PRE SENTED

THIS TEXTBOOK IS A COMPREHENSIVE INTRODUCTION TO STRUCTURAL STEELWORK DESIGN BASED ON THE LIMIT STATES APPROACH TO BS 5950 FOR USE BY UNDERGRADUATES IN CIVIL AND STRUCTURAL ENGINEERING IT WILL ALSO SERVE AS A REFERENCE FOR PRACTISING ENGINEERS UNFAMILIAR WITH NEW PARTS OF BS 5950 THE TEXT INTRODUCES BASIC PROPERTIES OF STEEL TYPES OF STEEL STRUC

STRUCTURAL DESIGN OF BUILDINGS HOLISTIC DESIGN IS THE ESSENTIAL REFERENCE FOR STRUCTURAL ENGINEERS INVOLVED IN THE DESIGN OF BUILDINGS AND OTHER STRUCTURES IT FORMS PART OF THE STRUCTURAL DESIGN OF BUILDINGS SERIES AND INTRODUCES THE CONCEPTS AND PRINCIPLES INVOLVED IN HOLISTIC STRUCTURAL DESIGN OF A BUILDING

THIS BOOK PRESENTS COMPARATIVE DESIGN AS AN APPROACH TO THE CONCEPTUAL DESIGN OF STRUCTURES PRIMARILY FOCUSING ON REASONABLE STRUCTURAL PERFORMANCE SUSTAINABLE DEVELOPMENT AND ARCHITECTURAL AESTHETICS IT FEATURES DETAILED STUDIES OF STRUCTURAL PERFORMANCE THROUGH THE COMPOSITION AND DE COMPOSITION OF THESE ELEMENTS FOR A VARIETY OF STRUCTURES SUCH AS HIGH RISE BUILDINGS LONG SPAN CROSSINGS AND SPATIAL STRUCTURES THE LATTER PART OF THE BOOK ADDRESSES THE THEORETICAL BASIS AND PRACTICAL IMPLEMENTATION OF KNOWLEDGE ENGINEERING IN STRUCTURAL DESIGN AND A CASE BASED FUZZY REASONING METHOD IS INTRODUCED TO ILLUSTRATE THE CONCEPT AND METHOD OF INTELLIGENT DESIGN THE BOOK IS INTENDED FOR CIVIL ENGINEERS STRUCTURAL DESIGNERS AND ARCHITECTS AS WELL AS SENIOR UNDERGRADUATE AND GRADUATE STUDENTS IN CIVIL ENGINEERING AND ARCHITECTURE LIN SHAOPEI AND HUANG ZHEN ARE BOTH PROFESSORS AT THE DEPARTMENT

OF CIVIL ENGINEERING SHANGHAI JIAO TONG UNIVERSITY CHINA

THIS BOOK AIMS TO BRIGE THE GAP BETWEEN ENGINEERS AND ARCHITECTS UNDERSTANDING OF STRUCTURAL FORM ITS INTENTION IS TO INSPIRE THE DEVELOPMENT OF INNOVATIVE AND VIABLE STRUCTURES IT PRESENTS CASE STUDIES WHERE IMAGINATIVE STRUCTURAL FORMS ARE IN HARMONY WITH THE ARCHITECTURAL CONCEPT AND AT THE SAME TIME PRESENT VERY EFFICIENT SOLUTIONS TO TECHNICAL AND STRUCTURAL PROBLEMS

RATHER THAN RELYING ON SEPARATE LITERATURE IN THE FIELDS OF STRUCTURAL ENGINEERING ARCHITECTURE CONSTRUCTION AND HISTORY THIS TEXT PRESENTS THE FIELD OF STRUCTURES HOLISTICALLY IN TERMS OF BUILDING AND ARCHITECTURE BUILDINGS ARE STUDIED FROM ALL POINTS OF VIEW GEOMETRICAL AESTHETIC HISTORICAL FUNCTIONAL ENVIRONMENTAL AND CONSTRUCTION PROVIDING THE BROADEST TREATMENT OF STRUCTURES AVAILABLE DESCRIPTIVE ANALYTICAL AND GRAPHICAL TREATMENT OF TOPICS ARE PRESENTED WITH NEARLY EQUAL EMPHASIS NUMEROUS CASE STUDIES THROUGHOUT EXEMPLIFY STRUCTURAL CONCEPTS AND DEVELOP A FEELING FOR STRUCTURE AND FORM INSTEAD OF SUPPORTING SPECIFIC ARCHITECTURAL STYLES OR STRUCTURAL ACROBATICS TEACHING IN THE CONTEXT OF BUILDING STRUCTURE AND FORM I E LOW RISE HIGH RISE LONG SPAN ETC ALLOWS STUDENTS TO UNDERSTAND STRUCTURES ON REAL NOT ABSTRACT MATHEMATICAL TERMS STRUCTURAL SYSTEMS I E FRAMES ARCHES SPACE FRAMES SOFT SHELLS ETC AND HOW THEY AID IN MAKING SPACE AND ENHANCING THE FORMAL PRESENTATION OF A STRUCTURE ARE DISCUSSED IN DETAIL CHAPTER 3 DEALS WITH APPROXIMATE DESIGN METHODS FOR STEEL WOOD REINFORCED CONCRETE AND PRESTRESSED CONCRETE ACCORDING TO THE

COVERING COMMON PROBLEMS LIKELY FAILURES AND THEIR REMEDIES THIS IS AN ESSENTIAL ON SITE GUIDE TO THE BEHAVIOUR OF A BUILDING S STRUCTURE PRESENTED IN A CLEAR STRUCTURE AND USER FRIENDLY STYLE THE BOOK GOES THROUGH ALL THE STRUCTURAL ASPECTS OF A BUILDING AND ASSESSES THE IMPORTANCE OF THE DIFFERENT COMPONENTS IT EXPLAINS THE STRUCTURAL BEHAVIOUR OF BUILDINGS GIVING SOME OF THE BASICS OF STRUCTURES TOGETHER WITH PLENTY OF REAL LIFE EXAMPLES AND GUIDANCE

THIS OVERVIEW OF THE ANALYSIS AND DESIGN OF BUILDINGS RUNS FROM BASIC PRINCIPLES AND ELEMENTARY
STRUCTURAL ANALYSIS TO THE SELECTION OF STRUCTURAL SYSTEMS AND MATERIALS AND ON TO

FOUNDATIONS AND RETAINING STRUCTURES IT PRESENTS A VARIETY OF APPROACHES AND METHODOLOGIES WHILE FEATURING REALISTIC DESIGN EXAMPLES AS A COMPREHENSIVE GUIDE AND DESK REFERENCE FOR PRACTICING STRUCTURAL AND CIVIL ENGINEERS AND FOR ENGINEERING STUDENTS IT DRAWS ON THE AUTHOR S TEACHING EXPERIENCE AT THE CITY COLLEGE OF NEW YORK AND HIS WORK AS A DESIGN ENGINEER AND ARCHITECT IT IS ESPECIALLY USEFUL FOR THOSE TAKING THE NATIONAL COUNCIL OF EXAMINERS FOR ENGINEERING AND SURVEYING SE EXAM

CONSTRUCTION PROJECTS ONCE THEY ARE COMPLETED ARE INTENDED TO EXIST IN THE SKYLINES OF CITIES AND TOWNS FOR DECADES SUSTAINABLE TECHNOLOGIES SEEK TO TAKE THESE EXISTING STRUCTURES AND MAKE THEM ENVIRONMENTALLY FRIENDLY AND ENERGY EFFICIENT DESIGN SOLUTIONS FOR NZEB RETROFIT BUILDINGS IS A CRITICAL SCHOLARLY RESOURCE THAT EXAMINES THE IMPORTANCE OF CREATING ARCHITECTURE THAT NOT ONLY PROMOTES THE DAILY FUNCTION OF THESE BUILDINGS BUT IS ALSO ENVIRONMENTALLY SUSTAINABLE FEATURING A BROAD RANGE OF TOPICS INCLUDING RENEWABLE ENERGY SOURCES SOLAR ENERGY AND ENERGY PERFORMANCE THIS BOOK IS GEARED TOWARD PROFESSIONALS STUDENTS AND RESEARCHERS SEEKING CURRENT RESEARCH ON SUSTAINABLE OPTIONS FOR UPGRADING EXISTING EDIFICES TO BECOME MORE ENVIRONMENTALLY FRIENDLY

TRADITIONALLY THE PROCESS OF DESIGN HAS CONCENTRATED ON THE CONSTRUCTION PHASE ITSELF WITH THE PRIMARY OBJECTIVE BEING TO OPTIMISE EFFICIENCY AND MINIMISE COSTS DURING DEVELOPMENT AND CONSTRUCTION WITH THE MOVE TOWARDS A MORE SUSTAINABLE DEVELOPMENT COMES THE NEED FOR THIS SHORT TERM APPROACH TO BE EXPANDED TO ENCOMPASS THE ENTIRE SERVICE LIFE OF THE STRUCTURE THIS BOOK DESCRIBES HOW TO OPTIMISE THE SERVICE LIFE OF STRUCTURES THROUGH AN OPTIMUM INTEGRATED LIFE CYCLE DESIGN PROCESS SUSTAINABILITY AND MATERIAL PERFORMANCE ISSUES ARE DETAILED INTEGRATED LIFE CYCLE DESIGN OF STRUCTURES PROVIDES A COMPREHENSIVE ACCOUNT OF THIS RAPIDLY EMERGING FIELD IT IS ESSENTIAL READING FOR CIVIL AND STRUCTURAL ENGINEERS DESIGNERS ARCHITECTS CONTRACTORS AND CLIENTS

CONCRETE STRUCTURES CAN BE DESIGNED FOR DURABILITY BY APPLYING THE PRINCIPLES AND PROCEDURES OF RELIABILITY THEORY COMBINED WITH TRADITIONAL STRUCTURAL DESIGN THIS BOOK IS THE FIRST

SYSTEMATIC ATTEMPT TO INTRODUCE INTO STRUCTURAL DESIGN A GENERAL THEORY OF STRUCTURAL RELIABILITY AND EXISTING CALCULATION MODELS FOR COMMON DEGRADATION PROCESSES IT

STRUCTURAL IRREGULARITIES ARE ONE OF THE MOST FREQUENT CAUSES OF SEVERE DAMAGES IN BUILDINGS AS EVIDENCED BY THE NUMEROUS EARTHQUAKES IN RECENT YEARS THIS ISSUE IS OF PARTICULAR IMPORTANCE SINCE REAL STRUCTURES ARE ALMOST ALL IRREGULAR FURTHERMORE STRUCTURAL IRREGULARITIES DEPEND ON SEVERAL FACTORS OFTEN VERY DIFFICULT TO PREDICT THIS BOOK IS AN ESSENTIAL TOOL FOR UNDERSTANDING THE PROBLEM OF STRUCTURAL IRREGULARITIES AND PROVIDES THE MOST UP TO DATE REVIEW ON THIS TOPIC COVERING THE ASPECTS OF GROUND ROTATIONS ANALYSIS DESIGN CONTROL AND MONITORING OF IRREGULAR STRUCTURES IT INCLUDES 24 CONTRIBUTIONS FROM AUTHORS OF 13 COUNTRIES GIVING A COMPLETE AND INTERNATIONAL VIEW OF THE PROBLEM

THIS BOOK PRESENTS THE RESULTS OF A JAPANESE NATIONAL RESEARCH PROJECT CARRIED OUT IN 1988
1993 USUALLY REFERRED TO AS THE NEW RC PROJECT DEVELOPING ADVANCED REINFORCED CONCRETE
BUILDING STRUCTURES WITH HIGH STRENGTH AND HIGH QUALITY MATERIALS UNDER ITS AUSPICES THE
PROJECT AIMED AT PROMOTING CONSTRUCTION OF HIGHRISE REINFORCED CONCRETE BUILDINGS IN HIGHLY
SEISMIC AREAS SUCH AS JAPAN THE PROJECT COVERED ALL THE ASPECTS OF REINFORCED CONCRETE
STRUCTURES NAMELY MATERIALS STRUCTURAL ELEMENTS STRUCTURAL DESIGN CONSTRUCTION AND
FEASIBILITY STUDIES IN ADDITION TO PRESENTING THESE RESULTS THE BOOK INCLUDES TWO CHAPTERS
GIVING AN ELEMENTARY EXPLANATION OF MODERN ANALYTICAL TECHNIQUES I E FINITE ELEMENT ANALYSIS
AND EARTHQUAKE RESPONSE ANALYSIS

THIS BOOK SUMMARIZES ADVANCES IN A NUMBER OF FUNDAMENTAL AREAS OF OPTIMIZATION WITH APPLICATION IN ENGINEERING DESIGN THE SELECTION OF THE BEST OR OPTIMUM DESIGN HAS LONG BEEN A MAJOR CONCERN OF DESIGNERS AND IN RECENT YEARS INTEREST HAS GROWN IN APPLYING MATHEMATICAL OPTIMIZATION TECHNIQUES TO DESIGN OF LARGE ENGINEERING AND INDUSTRIAL SYSTEM

WRITTEN FOR THE PRACTICING ARCHITECT STRUCTURAL DESIGN ADDRESSES THE PROCESS ON BOTH A CONCEPTUAL AND A MATHEMATICAL LEVEL MOST IMPORTANTLY IT HELPS ARCHITECTS WORK WITH STRUCTURAL CONSULTANTS AND UNDERSTAND ALL THE NECESSARY CONSIDERATIONS WHEN DESIGNING

STRUCTURAL SYSTEMS USING A MINIMUM OF SIMPLE MATH THIS BOOK SHOWS YOU HOW TO MAKE CORRECT DESIGN CALCULATIONS FOR STRUCTURES MADE FROM STEEL WOOD CONCRETE AND MASONRY WHAT S MORE THIS EDITION HAS BEEN COMPLETELY UPDATED TO REFLECT THE LATEST DESIGN METHODS AND CODES INCLUDING LRFD FOR STEEL DESIGN THE BOOK WAS ALSO RE DESIGNED FOR EASY NAVIGATION ESSENTIAL PRINCIPLES AS WELL AS STRUCTURAL SOLUTIONS ARE VISUALLY REINFORCED WITH HUNDREDS OF DRAWINGS PHOTOGRAPHS AND OTHER ILLUSTRATIONS MAKING THIS BOOK TRULY ARCHITECT FRIENDLY

SMOOTH TOPOLOGICAL DESIGN OF CONTINUUM STRUCTURES FOCUSES ON THE USE OF A NEWLY PROPOSED TOPOLOGY ALGORITHM FOR STRUCTURAL OPTIMIZATION CALLED SMOOTH EDGED MATERIAL DISTRIBUTION FOR OPTIMIZING TOPOLOGY SEMDOT THE BOOK PRESENTS THE BASIC THEORY OF SEMDOT AND EXPLAINS CONNECTIONS BETWEEN THIS METHOD AND THE CORRESPONDING OPTIMIZERS THE METHOD IS USED TO ADDRESS THE LONG STANDING JAGGED EDGE PROBLEM FACING CLASSICAL TOPOLOGY OPTIMIZATION ALGORITHMS AND IS PRESENTED AS A PERFECT TOOL FOR COMBINING ADDITIVE MANUFACTURING AND TOPOLOGY OPTIMIZATION WHICH ARE INCREASINGLY COUPLED TOGETHER TO PRODUCE NEW PART DESIGNS A RANGE OF REPRESENTATIVE CASE STUDIES ARE ALSO INCLUDED TO ILLUSTRATE APPLICATIONS THIS SERVES AS A TEXTBOOK AND REFERENCE FOR GRADUATE AND SENIOR UNDERGRADUATE STUDENTS IN THE AREA AS WELL AS ENGINEERS IN THE STRUCTURAL OPTIMIZATION FIELD FULL MODIFIABLE MATLAB CODES FOR EACH CHAPTER ARE AVAILABLE ONLINE

STEEL PLATED STRUCTURES ARE IMPORTANT IN A VARIETY OF MARINE AND LAND BASED APPLICATIONS INCLUDING SHIPS OFFSHORE PLATFORMS POWER AND CHEMICAL PLANTS BOX GIRDER BRIDGES AND BOX GIRDER CRANES THE BASIC STRENGTH MEMBERS IN STEEL PLATED STRUCTURES INCLUDE SUPPORT MEMBERS SUCH AS STIFFENERS AND PLATE GIRDERS PLATES STIFFENED PANELS GRILLAGES AND BOX GIRDERS DURING THEIR LIFETIME THE STRUCTURES CONSTRUCTED USING THESE MEMBERS ARE SUBJECTED TO VARIOUS TYPES OF LOADING WHICH IS FOR THE MOST PART OPERATIONAL BUT MAY IN SOME CASES BE EXTREME OR EVEN ACCIDENTAL ULTIMATE LIMIT STATE DESIGN OF STEEL PLATED STRUCTURES REVIEWS AND DESCRIBES BOTH FUNDAMENTALS AND PRACTICAL DESIGN PROCEDURES IN THIS FIELD THE DERIVATION OF THE BASIC MATHEMATICAL EXPRESSIONS IS PRESENTED TOGETHER WITH A THOROUGH DISCUSSION OF THE ASSUMPTIONS AND THE VALIDITY OF THE UNDERLYING EXPRESSIONS AND SOLUTION METHODS PARTICULARLY VALUABLE

COVERAGE IN THE BOOK INCLUDES SERVICEABILITY AND THE ULTIMATE LIMIT STATE DESIGN OF STEEL STRUCTURAL SYSTEMS AND THEIR COMPONENTS THE PROGRESSIVE COLLAPSE AND THE DESIGN OF DAMAGE TOLERANT STRUCTURES IN THE CONTEXT OF MARINE ACCIDENTS AGE RELATED STRUCTURAL DEGRADATION SUCH AS CORROSION AND FATIGUE CRACKS FURTHERMORE THIS BOOK IS ALSO AN EASILY ACCESSED DESIGN TOOL WHICH FACILITATES LEARNING BY APPLYING THE CONCEPTS OF THE LIMIT STATES FOR PRACTICE USING A SET OF COMPUTER PROGRAMS WHICH CAN BE DOWNLOADED IN ADDITION EXPERT GUIDANCE ON MECHANICAL MODEL TEST RESULTS AS WELL AS NONLINEAR FINITE ELEMENT SOLUTIONS SOPHISTICATED DESIGN METHODOLOGIES USEFUL FOR PRACTITIONERS IN INDUSTRIES OR RESEARCH INSTITUTIONS SELECTED METHODS FOR ACCURATE AND EFFICIENT ANALYSES OF NONLINEAR BEHAVIOR OF STEEL PLATED STRUCTURES BOTH UP TO AND AFTER THE ULTIMATE STRENGTH IS REACHED IS PROVIDED DESIGNED AS BOTH A TEXTBOOK AND A HANDY REFERENCE THE BOOK IS WELL SUITED TO TEACHERS AND UNIVERSITY STUDENTS WHO ARE APPROACHING THE LIMIT STATE DESIGN TECHNOLOGY OF STEEL PLATED STRUCTURES FOR THE FIRST TIME THE BOOK ALSO MEETS THE NEEDS OF STRUCTURAL DESIGNERS OR RESEARCHERS WHO ARE INVOLVED IN CIVIL MARINE AND MECHANICAL ENGINEERING AS WELL AS OFFSHORE ENGINEERING AND NAVAL ARCHITECTURE

THIS BOOK PRESENTS OVER 100 PAPERS FROM THE 3RD ENGINEERING PRODUCT DESIGN EDUCATION INTERNATIONAL CONFERENCE DEDICATED TO THE SUBJECT OF EXPLORING NOVEL APPROACHES IN PRODUCT DESIGN EDUCATION THE THEME OF THE BOOK IS CROSSING DESIGN BOUNDARIES WHICH REFLECTS THE EDITORS WISH TO INCORPORATE MANY OF THE DISCIPLINES ASSOCIATED WITH AND INT

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