

Zero Emission Buildings And Architecture

GETTING THE BOOKS **ZERO EMISSION BUILDINGS AND ARCHITECTURE** NOW IS NOT TYPE OF INSPIRING MEANS. YOU COULD NOT LONESOME GOING AFTERWARD BOOKS STOCK OR LIBRARY OR BORROWING FROM YOUR FRIENDS TO GAIN ACCESS TO THEM. THIS IS AN VERY EASY MEANS TO SPECIFICALLY ACQUIRE GUIDE BY ON-LINE. THIS ONLINE MESSAGE **ZERO EMISSION BUILDINGS AND ARCHITECTURE** CAN BE ONE OF THE OPTIONS TO ACCOMPANY YOU PAST HAVING SUPPLEMENTARY TIME.

IT WILL NOT WASTE YOUR TIME. ALLOW ME, THE E-BOOK WILL AGREED CIRCULATE YOU NEW BUSINESS TO READ. JUST INVEST LITTLE MATURE TO READ THIS ON-LINE REVELATION **ZERO EMISSION BUILDINGS AND ARCHITECTURE** AS WITHOUT DIFFICULTY AS REVIEW THEM WHEREVER YOU ARE NOW.

NET ZERO ENERGY BUILDINGS - KARSTEN VOSS 2012-12-10
"NET ZERO ENERGY BUILDINGS, EQUILIBRIUM BUILDINGS OR CARBON NEUTRAL CITIES – DEPENDING ON LOCATION AND THE REASONS FOR MAKING THE CALCULATION, THE NUMBERS ARE RUN DIFFERENTLY. THE VARIETY OF TERMS IN USE INDICATES THAT A SCIENTIFIC METHOD IS STILL LACKING – WHICH IS A PROBLEM NOT JUST IN REGARD TO INTERNATIONAL COMMUNICATION, BUT ALSO WITH RESPECT TO PLANNING PROCESSES AS A RESPONSE TO ENERGY CHALLENGES. THE CLARIFICATION AND MEANING OF THE MOST IMPORTANT TERMS IN USE IS EXTREMELY IMPORTANT FOR THEIR IMPLEMENTATION.

SINCE OCTOBER 2008, A PANEL OF EXPERTS FROM AN INTERNATIONAL ENERGY AGENCY HAS CONCERNED ITSELF WITH THESE TOPICS AS PART OF A PROJECT ENTITLED "TOWARDS NET ZERO ENERGY SOLAR BUILDINGS". THE OBJECTIVE IS TO ANALYSE EXEMPLARY BUILDINGS THAT ARE NEAR A ZERO-ENERGY BALANCE IN ORDER TO DEVELOP METHODS AND TOOLS FOR THE PLANNING, DESIGN AND OPERATION OF SUCH BUILDINGS. THE RESULTS ARE DOCUMENTED IN THIS PUBLICATION: IN ADDITION TO THE PRESENTATION OF SELECTED PROJECTS, IT IS NOT JUST ARCHITECTURAL SHOWCASE PROJECTS THAT ARE SHOWN – THE FOCUS IS ON

RELAYING KNOWLEDGE AND EXPERIENCE GAINED BY PLANNERS AND BUILDERS. EVEN IF MANY QUESTIONS REMAIN UNANSWERED: PROJECT EXAMPLES THAT HAVE ALREADY BEEN IMPLEMENTED PROVE ON A PRACTICAL BASIS THAT THE OBJECTIVE OF A ZERO ENERGY BALANCE IS ALREADY POSSIBLE TODAY."

ZEDLIFE - BILL DUNSTER 2019-06-27

THE ARGUMENT FOR LOW-COST, ZERO-ENERGY, ZERO-WASTE ARCHITECTURE HAS NEVER BEEN TIMELIER, WHILE THE MAINSTREAM HAS LARGELY ABANDONED OR NEGLECTED THIS AGENDA: IN THE UK THE RECENT MANDATORY ZERO-CARBON PERFORMANCE TARGETS FOR NEW HOMES HAVE BEEN POSTPONED OR FORGOTTEN AT A TIME WHEN THOUSANDS OF NEW HOMES WILL BE BUILT, AND THERE IS ALREADY A SHORTAGE OF ELECTRIC GENERATING CAPACITY. THIS BOOK OFFERS A FORCEFUL CHALLENGE TO THE CURRENT ADDICTION TO OVERCONSUMPTION OF NATURAL CAPITAL AND ENERGY, AND PROVIDES WORKABLE, SUSTAINABLE SOLUTIONS FOR ZERO-CARBON, ZERO-WASTE DESIGN.

THERMAL DESIGN OF BUILDINGS - PHILLIP JONES
2021-07-26

THE WAY WE HEAT, COOL AND VENTILATE OUR BUILDINGS IS CENTRAL TO MANY OF TODAY'S CONCERNS, INCLUDING PROVIDING COMFORTABLE, HEALTHY AND PRODUCTIVE ENVIRONMENTS, USING ENERGY AND MATERIALS EFFICIENTLY, AND REDUCING GREENHOUSE GAS EMISSIONS. AS WE DRIVE

TOWARDS A ZERO-CARBON SOCIETY, DESIGN SOLUTIONS THAT COMBINE ARCHITECTURE, ENGINEERING AND THE NEEDS OF THE INDIVIDUAL ARE INCREASINGLY BEING SOUGHT. THERMAL DESIGN OF BUILDINGS AIMS TO PROVIDE AN UNDERSTANDING FROM WHICH SUCH SOLUTIONS CAN BE DEVELOPED, PLACING TECHNOLOGICAL DEVELOPMENTS WITHIN THE CONTEXT OF A WIDER WORLD VIEW OF THE BUILT ENVIRONMENT AND ENERGY SYSTEMS, AND AN HISTORICAL PERSPECTIVE OF HOW BUILDINGS HAVE RESPONDED TO CLIMATE AND SUSTAINABLE DEVELOPMENT.

LOW IMPACT BUILDING - TOM WOOLLEY 2013-01-22

THIS GUIDE TO THE DESIGNS, TECHNOLOGIES AND MATERIALS THAT REALLY MAKE GREEN BUILDINGS WORK WILL HELP ARCHITECTS, SPECIFIERS AND CLIENTS MAKE INFORMED CHOICES, BASED ON RELIABLE TECHNICAL INFORMATION. LOW IMPACT BUILDING: HOUSING USING RENEWABLE MATERIALS IS ABOUT CHANGING THE WAY WE BUILD HOUSES TO REDUCE THEIR 'CARBON' FOOTPRINT AND TO MINIMISE ENVIRONMENTAL DAMAGE. ONE OF THE WAYS THIS CAN BE DONE IS BY REDUCING THE ENERGY AND ENVIRONMENTAL IMPACT OF THE MATERIALS AND RESOURCES USED TO CONSTRUCT BUILDINGS BY CHOOSING ALTERNATIVE PRODUCTS AND SYSTEMS. IN PARTICULAR, WE NEED TO RECOGNISE THE POTENTIAL FOR USING NATURAL AND RENEWABLE CONSTRUCTION MATERIALS AS A WAY TO REDUCE BOTH CARBON EMISSIONS BUT ALSO BUILD IN A MORE BENIGN AND HEALTHY WAY. THIS BOOK IS AN

ACCOUNT OF SOME ATTEMPTS TO INTRODUCE THIS INTO MAINSTREAM HOUSE CONSTRUCTION AND THE PROBLEMS AND OBSTACLES THAT NEED TO BE OVERCOME TO GAIN WIDER ACCEPTANCE OF GENUINELY ENVIRONMENTAL CONSTRUCTION METHODS. THE BOOK EXPLORES THE NATURE OF RENEWABLE MATERIALS IN DEPTH: WHERE DO THEY COME FROM, WHAT ARE THEY MADE OF AND HOW DO THEY GET INTO THE CONSTRUCTION SUPPLY CHAIN? THE DIFFERENCE BETWEEN ARTISAN AND SELF-BUILD MATERIALS LIKE EARTH AND STRAW, AND MORE HIGHLY PROCESSED AND MANUFACTURED PRODUCTS SUCH AS WOOD FIBRE INSULATION BOARDS IS EXPLORED. THE AUTHOR THEN GIVES AN ACCOUNT OF THE RENEWABLE HOUSE PROGRAMME IN THE UK EXPLAINING HOW IT CAME ABOUT AND HOW IT WAS FUNDED AND MANAGED BY GOVERNMENT AGENCIES. HE ANALYSES 12 CASE STUDIES OF PROJECTS FROM THE PROGRAMME, SETTING OUT THE DESIGN AND METHODS OF CONSTRUCTION, BUILDABILITY, ENVIRONMENTAL ASSESSMENT TOOLS USED IN THE DESIGN, PERFORMANCE IN TERMS OF ENERGY, AIR TIGHTNESS, CARBON FOOTPRINT AND POST-OCCUPANCY ISSUES. THE POLICY CONTEXT OF ENERGY AND SUSTAINABILITY IN THE UK, EUROPE AND THE REST OF THE WORLD IS SUBJECTED TO A CRITICAL EXAMINATION TO SHOW HOW THIS AFFECTS THE USE OF NATURAL AND RENEWABLE MATERIALS IN THE MARKET FOR INSULATION AND OTHER CONSTRUCTION MATERIALS. THE DEBATE OVER ENERGY USAGE AND EMBODIED ENERGY IS DISCUSSED, AS THIS IS CENTRAL TO

THE REASON WHY EVEN MANY ENVIRONMENTALLY PROGRESSIVE PEOPLE IGNORE THE CASE FOR NATURAL AND RENEWABLE MATERIALS. THE BOOK OFFERS A DISCUSSION OF BUILDING PHYSICS AND SCIENCE, CONSIDERING ENERGY PERFORMANCE, MOISTURE, DURABILITY, HEALTH AND SIMILAR ISSUES. A CRITICAL EVALUATION OF ASSESSMENT, ACCREDITATION AND LABELLING OF MATERIALS AND GREEN BUILDINGS IS CENTRAL TO THIS AS WELL AS A REVIEW OF SOME OF THE KEY RESEARCH IN THE FIELD.

MODERN ARCHITECTURE AND CLIMATE - DANIEL A. BARBER
2023-04-11

HOW CLIMATE INFLUENCED THE DESIGN STRATEGIES OF MODERNIST ARCHITECTS MODERN ARCHITECTURE AND CLIMATE EXPLORES HOW LEADING ARCHITECTS OF THE TWENTIETH CENTURY INCORPORATED CLIMATE-MEDIATING STRATEGIES INTO THEIR DESIGNS, AND SHOWS HOW REGIONAL APPROACHES TO CLIMATE ADAPTABILITY WERE ESSENTIAL TO THE DEVELOPMENT OF MODERN ARCHITECTURE. FOCUSING ON THE PERIOD SURROUNDING WORLD WAR II—BEFORE FOSSIL-FUEL POWERED AIR-CONDITIONING BECAME WIDELY AVAILABLE—DANIEL BARBER BRINGS TO LIGHT A VIBRANT AND DYNAMIC ARCHITECTURAL DISCUSSION INVOLVING DESIGN, MATERIALS, AND SHADING SYSTEMS AS MEANS OF INTERIOR CLIMATE CONTROL. HE LOOKS AT PROJECTS BY WELL-KNOWN ARCHITECTS SUCH AS RICHARD NEUTRA, LE CORBUSIER, LUIGI CIO COSTA, MIES VAN DER ROHE, AND SKIDMORE,

OWINGS, AND MERRILL, AND THE WORK OF CLIMATE-FOCUSED ARCHITECTS SUCH AS MMM ROBERTO, OLGAY AND OLGAY, AND CLIFF MAY. DRAWING ON THE EDITORIAL PROJECTS OF JAMES MARSTON FITCH, ELIZABETH GORDON, AND OTHERS, HE DEMONSTRATES HOW IMAGES AND DIAGRAMS PRODUCED BY ARCHITECTS HELPED CONCEPTUALIZE CLIMATE KNOWLEDGE, ALONGSIDE THE WORK OF METEOROLOGISTS, PHYSICISTS, ENGINEERS, AND SOCIAL SCIENTISTS. BARBER DESCRIBES HOW THIS NOVEL TYPE OF ENVIRONMENTAL MEDIA CATALYZED NEW WAYS OF THINKING ABOUT CLIMATE AND ARCHITECTURAL DESIGN. EXTENSIVELY ILLUSTRATED WITH ARCHIVAL MATERIAL, MODERN ARCHITECTURE AND CLIMATE PROVIDES GLOBAL PERSPECTIVES ON MODERN ARCHITECTURE AND ITS EVOLVING RELATIONSHIP WITH A CHANGING CLIMATE, SHOWCASING DESIGNS FROM LATIN AMERICA, EUROPE, THE UNITED STATES, THE MIDDLE EAST, AND AFRICA. THIS TIMELY AND IMPORTANT BOOK RECONCILES THE CULTURAL DYNAMISM OF ARCHITECTURE WITH THE MATERIAL REALITIES OF EVER-INCREASING CARBON EMISSIONS FROM THE MECHANICAL COOLING SYSTEMS OF BUILDINGS AND OFFERS A HISTORICAL FOUNDATION FOR TODAY'S ZERO-CARBON DESIGN.

THE WORLD'S GREENEST BUILDINGS - JERRY YUDELSON
2013

"THE WORLD'S GREENEST BUILDINGS PROVIDES THE FIRST WAY TO COMPARE BUILDING PERFORMANCE, USING COST AND ENERGY USE DATA THAT HAS BEEN VERIFIED BY INDEPENDENT

THIRD PARTIES AND TO UNDERSTAND HOW BUILDING PERFORMANCE CAN BE UPGRADED. THE BOOK PROVIDES: AN OVERVIEW OF THE RATING SYSTEMS AND SHOWS "BEST IN CLASS" BUILDING PERFORMANCE IN NORTH AMERICA, EUROPE, THE MIDDLE EAST, INDIA, CHINA, AUSTRALIA AND THE ASIA-PACIFIC REGION PRACTICAL EXAMPLES OF BEST PRACTICES FOR GREENING BOTH NEW AND EXISTING BUILDINGS, USEFUL FOR ARCHITECTS AND ENGINEERS, CONTRACTORS, BUILDING OWNERS AND MANAGERS, FACILITY PROFESSIONALS, DEVELOPERS, LENDERS AND INVESTORS, BROKERS AND APPRAISERS, AND EVERYONE CHARGED WITH MANAGING COMMERCIAL AND INSTITUTIONAL BUILDINGS A RESPONSE TO THE INTENSE NEED FOR A PRACTICAL REFERENCE FOR DESIGN PROFESSIONALS, BUILDING OWNERS, DEVELOPERS AND FACILITY MANAGERS ON HOW GREEN BUILDINGS ACTUALLY PERFORM AT THE HIGHEST LEVEL, ONE THAT TAKES THEM STEP-BY-STEP THROUGH MANY DIFFERENT DESIGN SOLUTIONS. INTERVIEWS WITH ARCHITECTS, ENGINEERS, BUILDING OWNERS AND DEVELOPERS AND INDUSTRY EXPERTS, TO PROVIDE ADDED INSIGHT INTO THE GREENING PROCESS A COMPLETE GUIDE TO WORLD-CLASS GREEN BUILDING PERFORMANCE PRIMARILY FOR NEW BUILDINGS, INCLUDING CORPORATE, COMMERCIAL, EDUCATIONAL, GOVERNMENTAL AND OTHER LARGE BUILDING TYPES A WELATH OF EXEMPLARY CASE STUDIES OF SUCCESSFUL GREEN BUILDING PROJECTS USING ACTUAL PERFORMANCE DATA FROM WHICH TO LEARN A "RECIPE,"

BASED ON OTHERS' EXPERIENCES, FOR DELIVERING SUCCESSFUL GREEN BUILDING PROJECTS IN THE VARIOUS COUNTRIES PROFILED"--

GREEN BUILDING TRENDS - JERRY YUDELSON 2012-07-16

THE "GREEN BUILDING REVOLUTION" IS A WORLDWIDE MOVEMENT FOR ENERGY-EFFICIENT, ENVIRONMENTALLY AWARE ARCHITECTURE AND DESIGN. EUROPE HAS BEEN IN THE FOREFRONT OF GREEN BUILDING TECHNOLOGY, AND GREEN BUILDING TRENDS: EUROPE PROVIDES AN INDISPENSABLE OVERVIEW OF THESE CUTTING EDGE IDEAS AND APPLICATIONS. IN ORDER TO WRITE THIS BOOK, WELL-KNOWN U.S. GREEN BUILDING EXPERT JERRY YUDELSON INTERVIEWED A NUMBER OF EUROPE'S LEADING ARCHITECTS AND ENGINEERS AND VISITED MANY EXEMPLARY PROJECTS. WITH THE HELP OF COPIOUS PHOTOGRAPHS AND ILLUSTRATIONS, YUDELSON DESCRIBES SOME OF THE LEADING CONTEMPORARY GREEN BUILDINGS IN EUROPE, INCLUDING THE NEW LUFTHANSA HEADQUARTERS IN FRANKFURT, THE NORDDEUTSCHE LANDESBANK IN HANNOVER, A NEW SCHOOL AT UNIVERSITY COLLEGE LONDON, THE BEAUFORT COURT ZERO-EMISSIONS BUILDING, THE MERCK SERONO HEADQUARTERS IN GENEVA, AND A ZERO-NET-ENERGY, ALL-GLASS HOUSE IN STUTTGART. IN CLEAR, JARGON-FREE PROSE, YUDELSON PROVIDES PROFILES OF PROGRESS IN THE JOURNEY TOWARDS SUSTAINABILITY, DESCRIBES THE CURRENT REGULATORY AND BUSINESS CLIMATES, AND PREDICTS WHAT THE NEAR FUTURE MAY BRING. HE ALSO PROVIDES A PRIMER ON

NEW TECHNOLOGIES, SYSTEMS, AND REGULATORY APPROACHES IN WESTERN EUROPE THAT CAN BE ADOPTED IN NORTH AMERICA, INCLUDING BUILDING-INTEGRATED SOLAR TECHNOLOGIES, RADIANT HEATING AND COOLING SYSTEMS, DYNAMIC FAÇADES THAT PROVIDE NATURAL VENTILATION, INNOVATIVE METHODS FOR COMBINING CLIMATE CONTROL AND WATER FEATURES IN LARGER BUILDINGS, ZERO-NETENERGY HOMES BUILT LIKE THERMOS BOTTLES, AND STRICT GOVERNMENT TIMETABLES FOR ACHIEVING ZERO-CARBON BUILDINGS. GREEN BUILDING TRENDS: EUROPE IS AN ESSENTIAL RESOURCE FOR ANYONE INTERESTED IN THE LATEST DEVELOPMENTS IN THIS RAPIDLY GROWING FIELD.

BUILD BEYOND ZERO - BRUCE KING 2022-06-16

IN BUILD BEYOND ZERO, CARBON PIONEERS BRUCE KING AND CHRIS MAGWOOD RE-ENVISION BUILDINGS AS ONE OF OUR MOST PRACTICAL AND AFFORDABLE CLIMATE SOLUTIONS INSTEAD OF A LEADING DRIVER OF CLIMATE CHANGE. THEY MAKE A CASE FOR A "CARBON SMART" BUILT ENVIRONMENT THAT ABSORBS MORE GREENHOUSE GASES THAN IT EMITS. WHILE THE INDUSTRY PURSUES NET ZERO EMISSIONS FOCUSED ON IMPROVING THE ENERGY EFFICIENCY OF BUILDINGS, A CARBON-SMART APPROACH ALSO CONSIDERS WHAT WE MAKE ALL THOSE BUILDINGS WITH, AND THE SUPPLY CHAINS THAT DELIVER ALL THOSE PRODUCTS AND MATERIALS. BUILD BEYOND ZERO OFFERS AN EXCITING VISION OF CLIMATE-FRIENDLY ARCHITECTURE, ALONG WITH PRACTICAL ADVICE

FOR PROFESSIONALS WORKING TO ADDRESS THE CARBON FOOTPRINT OF OUR BUILT ENVIRONMENT.

ZERO CARBON ARCHITECTURE - AHMED MAGDY 2010

"THE MAIN GOAL OF THE BOOK IS TO HIGHLIGHT THE ENVIRONMENTAL PROBLEM CAUSED BY EMISSIONS OF CARBON DIOXIDE FROM THE BUILDINGS SECTOR AND THE EMERGENCE OF FUTURE SOLUTIONS DEVELOPED AND OF THE DEVELOPMENT OF SCIENCE AND TECHNOLOGY AND PRODUCE A NEW GENERATION, SUCH AS NANOTECHNOLOGY, THAT MUST CHANGE THE VISION OF ARCHITECTURAL DESIGN AS A WHOLE & BE THE FIRST AIM OF THE DESIGN IS THE LACK OF DAMAGE TO NATURE, AND WHAT WE MUST DO AS DESIGNERS, GOVERNMENTS OR USERS TO ADDRESS THIS PROBLEM"

GOOD ENERGY - JARED GREEN 2021-04-15

GOOD ENERGY DELIVERS A DECLARATION THAT RENEWABLE ENERGY CAN BE BEAUTIFUL, AFFORDABLE, AND EASY TO IMPLEMENT. JARED GREEN HIGHLIGHTS THIRTY-FIVE CASE STUDIES FROM AROUND THE WORLD, FEATURING A WIDE ARRAY OF DESIGNS AND BUILDING TYPES THAT ACHIEVE GOOD ENERGY, GOOD DESIGN, AND EXCELLENT COST-EFFICIENCY. SINGLE-FAMILY HOMES, TOWNHOUSES, COMMUNITY SPACES, SCHOOLS, OFFICES, AND EVEN POWER PLANTS DEMONSTRATE THAT RELYING ON SOLAR, WIND, AND GEOTHERMAL ENERGY DOESN'T HAVE TO COST MORE. EACH INSPIRING DESIGN HARMONIZES NATURE, TECHNOLOGY, AND DEMOCRATIC SPACE AND SHOWS THAT RENEWABLE ENERGY CAN BE APPEALING AND

ACCESSIBLE TO EVERYONE. AN INTERVIEW WITH MARK Z. JACOBSON, STANFORD UNIVERSITY PROFESSOR OF CIVIL AND ENVIRONMENTAL ENGINEERING AND COFOUNDER OF THE SOLUTIONS PROJECT, DISCUSSES PATHWAYS TO 100-PERCENT RENEWABLE ENERGY AROUND THE GLOBE THROUGH GOOD DESIGN.

ZERO EMISSION BUILDINGS - ANNE GRETE HESTNES 2017

ZERO EMISSION BUILDINGS SHOWS WHAT CAN BE ACHIEVED WHEN RESEARCHERS AND PRACTITIONERS WORK TOGETHER TO DEVELOP THE BUILDING PERFORMANCE LEVEL OF TOMORROW THAT IS NEEDED TODAY. THIS BOOK IS BASED ON THE RESEARCH AND DEVELOPMENT ACTIVITIES PERFORMED IN THE RESEARCH CENTRE ON ZERO EMISSION BUILDINGS (THE ZEB CENTRE) FROM 2009 TO 2017. EMISSIONS OF CO₂ AND OTHER GREENHOUSE GASES MUST BE REDUCED TO LIMIT GLOBAL WARMING. THUS, THE GOAL OF THE ZEB CENTRE HAS BEEN TO DEVELOP KNOWLEDGE, COMPETITIVE PRODUCTS, AND SOLUTIONS FOR EXISTING AND NEW BUILDINGS WHOSE PRODUCTION, OPERATION, AND DEMOLITION GIVE ZERO EMISSIONS OF GREENHOUSE GASES, WHILE ALSO CONSIDERING THE USERS' NEEDS FOR COMFORT AND FLEXIBILITY. THE RESULTS PRESENTED HERE ARE BASED ON RESEARCH, AS WELL AS EXPERIENCE, FROM THE DEVELOPMENT OF NINE REAL DEMONSTRATION BUILDINGS. THE KEY KNOWLEDGE AREAS NEEDED WHEN DESIGNING, BUILDING, AND OPERATING ZERO EMISSION BUILDINGS IS DISCUSSED IN DETAIL. THIS BOOK

SHOULD BE READ BY STUDENTS OF ARCHITECTURE AND ENGINEERING, AS WELL AS PRACTITIONERS LOOKING FOR WAYS TO CONTRIBUTE TO A SUSTAINABLE FUTURE. [SUBJECT: ARCHITECTURE, ENVIRONMENTAL STUDIES, SUSTAINABILITY & GREEN DESIGN]

THE NEW CARBON ARCHITECTURE - BRUCE KING
2017-12-05

SOAK UP CARBON INTO BEAUTIFUL, HEALTHY BUILDINGS THAT HEAL THE CLIMATE "GREEN BUILDINGS" THAT SLASH ENERGY USE AND CARBON EMISSIONS ARE ALL THE RAGE, BUT THEY AREN'T ENOUGH. THE HIDDEN CULPRIT IS EMBODIED CARBON — THE CARBON EMITTED WHEN MATERIALS ARE MINED, MANUFACTURED, AND TRANSPORTED — COMPRISING SOME 10% OF GLOBAL EMISSIONS. WITH THE BUILT ENVIRONMENT DOUBLING BY 2030, BUILDINGS ARE A CARBON JUGGERNAUT THREATENING TO OVERWHELM THE CLIMATE. IT DOESN'T HAVE TO BE THIS WAY. LIKE NEVER BEFORE IN HISTORY, BUILDINGS CAN BECOME PART OF THE CLIMATE SOLUTION. WITH BIOMIMICRY AND INNOVATION, WE CAN PULL HUGE AMOUNTS OF CARBON OUT OF THE ATMOSPHERE AND LOCK IT UP AS WALLS, ROOFS, FOUNDATIONS, AND INSULATION. WE CAN LITERALLY MAKE BUILDINGS OUT OF THE SKY WITH A MASSIVE POSITIVE IMPACT. THE NEW CARBON ARCHITECTURE IS A PARADIGM-SHIFTING TOUR OF THE INNOVATIONS IN ARCHITECTURE AND CONSTRUCTION THAT ARE MAKING THIS HAPPEN. OFFICE TOWERS BUILT FROM ADVANCED WOOD

PRODUCTS; AFFORDABLE, LOW-CARBON CONCRETE ALTERNATIVES; PLASTIC CLEANED FROM THE OCEANS AND TURNED INTO BUILDING BLOCKS. WE CAN EVEN GROW INSULATION FROM MYCELIUM. A TOUR DE FORCE BY THE LEADERS IN THE FIELD, THE NEW CARBON ARCHITECTURE WILL FIRE THE IMAGINATION OF ARCHITECTS, ENGINEERS, BUILDERS, POLICY MAKERS, AND EVERYONE ELSE CAPTIVATED BY THE POSSIBILITY OF ARCHITECTURE TO HEAL THE CLIMATE AND PRODUCE SAFER, HEALTHIER, AND MORE BEAUTIFUL BUILDINGS.

SUSTAINABILITY, ENERGY AND ARCHITECTURE - ALI SAYIGH
2013-09-25

THIS UNIQUE VOLUME OFFERS INSIGHTS FROM RENOWNED EXPERTS IN ENERGY EFFICIENT BUILDING FROM THE WORLD OVER, PROVIDING A MULTI-FACETED OVERVIEW OF THE STATE-OF-THE-ART IN ENERGY EFFICIENT ARCHITECTURE. IT OPENS BY DEFINING WHAT CONSTITUTES A SUSTAINABLE BUILDING, SUGGESTING BASES FOR SORELY NEEDED BENCHMARKS, THEN EXPLAINS THE MOST IMPORTANT TECHNIQUES AND TOOLS AVAILABLE TO ENGINEERS AND ARCHITECTS EXPLORING GREEN BUILDING TECHNOLOGIES. IT COVERS SUCH PIVOTAL ISSUES AS DAYLIGHTING, LED LIGHTING, INTEGRATING RENEWABLES SUCH AS SOLAR THERMAL AND COOLING, RETROFITTING, LEED AND SIMILAR CERTIFICATION EFFORTS, PASSIVE HOUSES, NET-ZERO AND CLOSE-ZERO STRUCTURES, WATER RECYCLING, AND MUCH MORE. HIGHLIGHTING BEST PRACTICES FOR COMMERCIAL

BUILDINGS AND PRIVATE HOMES, IN WIDELY VARIED CLIMATES AND WITHIN VASTLY DIFFERENT SOCIO-ECONOMIC CONTEXTS, THIS ILLUSTRATED REFERENCE WILL GUIDE ARCHITECTS AND ENGINEERS IN MAKING SUSTAINABLE CHOICES IN BUILDING MATERIALS AND METHODS. EXPLAINS THE BEST METHODS AND MATERIALS TO SUPPORT ENERGY EFFICIENT BUILDING FEATURES CASE STUDIES BY EXPERTS FROM A DOZEN COUNTRIES, DEMONSTRATING HOW SUSTAINABLE ARCHITECTURE CAN BE ACHIEVED IN VARIED CLIMATES AND ECONOMIES COVERS BOTH NEW CONSTRUCTIONS AND RETROFITTING OF EXISTING STRUCTURES

LOW ENERGY ARCHITECTURE AND LOW CARBON CITIES - FRANCESCO POMPONI 2020-12-04

THE BUILT ENVIRONMENT IS AT A TURNING POINT. WITH PROJECTED TRENDS IN POPULATION GROWTH AND URBANIZATION, GLOBAL DEMAND FOR NEW FLOOR AREA IS EXPECTED TO RISE SHARPLY. THIS WILL PUT UNPRECEDENTED PRESSURE ON THE AVAILABILITY OF NATURAL RESOURCES AND INCUR GREENHOUSE GAS EMISSIONS AND ENERGY DEMAND. SUCH ENVIRONMENTAL STRESSORS RISK DRIVING THE WORLD AWAY FROM THE UN SUSTAINABLE DEVELOPMENT GOALS, BUT EQUALLY REPRESENT AN OPPORTUNITY FOR JUST SUSTAINABILITY TRANSITIONS. THE CONTENTS OF THIS BOOK AIM TO ADDRESS SOME OF THESE GRAND CHALLENGES FROM A MULTI-DISCIPLINARY PERSPECTIVE. LOW-ENERGY ARCHITECTURE, LOW-CARBON CITIES AND THE OFTEN-

FORGOTTEN SUSTAINABILITY OF REFUGEE SETTLEMENTS ARE SOME OF THE THEMES DEALT WITH BY THE AUTHORS.

DELIVERING ON THE CLIMATE EMERGENCY - DEO PRASAD 2023-01-05

THIS BOOK FOCUSES ON THE TRANSITION TOWARDS NET-ZERO CARBON BUILT ENVIRONMENTS TO DELIVER ON THE CLIMATE EMERGENCY. IT PROVIDES AN EVIDENCE-BASED ROADMAP AND PROPOSES GUIDELINES TO ACHIEVING TARGETS COVERING EMERGING TECHNOLOGIES, MATERIALS, INNOVATIVE DESIGN, REGULATIONS AND POLICIES.

TARGETING ZERO - SIMON STURGIS 2019-06-27

EMBODIED AND WHOLE LIFE CARBON WILL CHANGE THE WAY BUILDINGS ARE DESIGNED, YET CARBON EMISSIONS ASSOCIATED WITH THE CONSTRUCTION AND LIFE OF BUILDINGS ARE NOT YET WHOLLY UNDERSTOOD BY THE PROFESSION. ENERGY IS ASSUMED TO BE THE PROVINCE OF SERVICES ENGINEERS, YET ENERGY FROM MATERIALS IS AS BIG AN ISSUE. ARCHITECTS HAVE THE OPPORTUNITY TO TAKE THE LEAD IN REDEFINING HOW BUILDINGS ARE DESIGNED TO ACHIEVE A LOW CARBON FUTURE.

INTEGRATED DESIGN STRATEGIES - DANIEL M. RUBERG 2013

QUESTIONS ABOUT THE ENVIRONMENT AND SUSTAINABILITY DOMINATE A MAJOR PORTION OF THE DISCUSSION WITHIN THE FIELD OF ARCHITECTURE. THE BUILDING SECTOR USES MORE ENERGY AND GENERATES MORE CARBON DIOXIDE THAN ANY OTHER SECTOR, CONSUMING NEARLY HALF (48.7%) OF ALL

ENERGY CREATED IN THE U.S. AND PRODUCING NEARLY HALF (46.7%) OF U.S. CO2 EMISSIONS (2009). THIS PRODUCES A SUBSTANTIAL ECONOMIC AND ENVIRONMENTAL IMPACT. WHILE THE INCREASING CONCERN FOR THE ENVIRONMENT IS COUNTERED BY A SIGNIFICANT AMOUNT OF DISBELIEF AND OPPOSITION, MOST ARCHITECTS RECOGNIZE THE DANGER ASSOCIATED WITH A BUILT ENVIRONMENT THAT IS OVERLY RELIANT ON FOSSIL FUELS. THE PROFESSION OF ARCHITECTURE HAS THE ABILITY TO RESPOND TO CLIMATE CHANGE, TO CREATE ALTERNATIVE ENERGY, AND TO REDUCE THE LEVEL OF TOXIC MATERIALS IN THE BUILT ENVIRONMENT. A NEW DIRECTION IN ARCHITECTURE STRIVES FOR BUILDINGS THAT PRODUCE ZERO ENERGY, ZERO CARBON, ZERO WASTE, AND THIS IS NECESSARY IN ORDER TO MITIGATE THE IMPACT BUILDINGS HAVE ON THE ENVIRONMENT. THIS THESIS ARGUES THAT WE MUST QUESTION CONVENTIONAL BUILDING DESIGN AND EMBRACE NEW PRACTICES OF INTEGRATED DESIGN TO CREATE MORE COMFORTABLE, PRODUCTIVE, AND EFFICIENT BUILDINGS. THE RESEARCH WILL FOCUS ON UNDERSTANDING AND INCORPORATING THE ESSENTIAL ELEMENTS OF INTEGRATED BUILDING DESIGN AND THE BENEFICIAL RESULTS. THE PROJECT COMPONENT OF THIS THESIS INVESTIGATES STRATEGIES THAT SEEK TO UNITE THE FOUR MAJOR COMPONENTS OF INTEGRATED DESIGN: CLIMATE, USE, BUILDING DESIGN AND SYSTEMS. THE PROJECT USES THE LIVING BUILDING CHALLENGE (LBC) AS A COMPREHENSIVE, PERFORMANCE-BASED FRAMEWORK TO GUIDE

THE INTEGRATED DESIGN DECISIONS. THE DESIGN PROJECT MAKES REUSE OF AN EXISTING BUILDING IN CINCINNATI, OHIO AND THE PROGRAM FOR AN INDUSTRIAL ARTS CENTER THAT INCLUDES BOTH A LIVING AND MAKING COMPONENT. THE DESIGN PROJECT PROMOTES COMMUNITY AND USES THE DYNAMIC POTENTIAL OF SOLAR ENERGY, AIR, AND WATER ON SITE TO OPTIMIZE THE DESIGN AND GENERATE RENEWABLE ENERGY. A SET OF SITE AND PROJECT SPECIFIC STRATEGIES WILL BE DEFINED, TESTED AND OPTIMIZED BASED ON THEIR POTENTIAL FOR PERFORMANCE-BASED VALUE.

ECO-GENERATIVE DESIGN FOR EARLY STAGES OF ARCHITECTURE - XAVIER MARSAULT 2017-12-27

THIS BOOK CAN BE FIRST CONSIDERED AS A COMPLETE SYNTHESIS OF THE EcCoGen ANR PROJECT (2011-2012), INVOLVING RESEARCHERS FROM DIFFERENT FRENCH LABS (INCLUDING MAP) AND DOMAINS, BREAKING MAJOR DIFFICULTIES OF THE REAL-TIME GENERATIVE DESIGN IN THE EARLY STAGES OF A PRE-ARCHITECTURAL PROJECT. THEN THE SCOPE BECOMES LARGER, AND THE AUTHORS INTRODUCE MAJOR PROSPECTS FOLLOWING RECENT ADVANCES ON NATURAL AND ARTIFICIAL EVOLUTION.

LOW ENERGY LOW CARBON ARCHITECTURE - KHALED AL-SALLAL 2016-05-05

PROVIDING A COMPLETE AND IN-DEPTH OVERVIEW OF THE AVAILABLE KNOWLEDGE IN THE AREA OF LOW ENERGY AND LOW CARBON ARCHITECTURE. THE SCOPE OF THIS EDITED

BOOK INCLUDES SEVERAL IMPORTANT TOPICS RANGING FROM CHAPTERS GIVING A BROAD VIEW OF THE PROGRESSING MODELS IN ECOLOGICALLY RESPONSIBLE ENVIRONMENTS TO OTHER CHAPTERS FOCUSING ON RECENT ADVANCES IN DE TOWARD ZERO CARBON - ADRIAN DEVAUN SMITH 2011 AN EXAMINATION AND EXPLORATION OF THE ISSUES THAT THE CHICAGO CLIMATE ACTION PLAN (CCAP) DEALS WITH AND HOW THEY MAY BE IMPLEMENTED

CIRCULAR DESIGN FOR ZERO EMISSION ARCHITECTURE AND BUILDING PRACTICE - MARWA DABAIEH 2022-12-03

CIRCULAR DESIGN FOR ZERO EMISSION ARCHITECTURE AND BUILDING PRACTICE: IT IS THE GREEN WAY OR THE HIGHWAY PRESENTS THE MAIN CONCEPTS OF CIRCULAR ARCHITECTURE AND BUILDING DESIGN, FOCUSING ON EMERGING TRENDS IN ZERO-EMISSION BUILDINGS, PARTICULARLY ZERO- AND MINUS-CARBON PRACTICE. THE BOOK IS STRUCTURED AROUND PRACTICAL DESIGN SOLUTIONS, INCLUDING RESEARCH-BASED PASSIVE SOLUTIONS FOR EXTREME CLIMATES. IT DISCUSSES PASSIVE AND LOW CARBON COOLING AND HEATING AND NATURAL VENTILATION, LIFECYCLE ASSESSMENT AND LIFE-COST ANALYSIS. THE BOOK PRESENTS EXAMPLES AND CASE STUDIES FROM INNOVATIVE LOW-TECH TO HIGH-TECH APPROACHES, COVERING A WIDE SPECTRUM OF CLIMATE ZONES TO SHOW LESSONS LEARNED AND PROOF OF CONCEPT. VULNERABLE GROUPS OF PEOPLE SUCH AS CLIMATE REFUGEES ARE DISCUSSED, ALONGSIDE HOW VERNACULAR ARCHITECTURE

CAN HELP INTRODUCE PRACTICAL METHODS INTO LOW-CARBON BUILDING PRACTICES. THIS BOOK PRESENTS THEORETICAL AND PRACTICAL COVERAGE OF CIRCULAR DESIGN FOR ZERO EMISSION ARCHITECTURE AND BUILDING IN RELATION TO THE GLOBAL CHALLENGES OF CLIMATE CHANGE AND EXTREME WEATHER. PRESENTS KEY CONCEPTS OF CIRCULAR ARCHITECTURE AND BUILDING DESIGN OFFERS PRACTICAL DESIGN SOLUTIONS, INCLUDING SOLUTIONS FOR EXTREME CLIMATES GIVES PRACTICAL SOLUTIONS FOR DESIGN RESILIENCE, CONSTRUCTION CLIMATE MITIGATION, ADAPTIVE BEHAVIOR, BUILDING RESILIENCE AND ENVIRONMENTAL IMPACT CONSIDERS VERNACULAR, TRADITION AND LOCALE-BASED, CLIMATE RESPONSE AND ADAPTIVE APPROACHES TO SUSTAINABLE BUILDING AND DESIGN DISCUSSES THE APPLICATION OF DESIGN AFTER DISASTERS AND EXTREME CLIMATE EVENTS GIVES PRACTICAL CASE STUDIES OF BOTH LOW- AND HIGH-TECH DESIGN SOLUTIONS FROM ACROSS CLIMATE ZONES ENERGY, PEOPLE, BUILDINGS - JUDIT KIMPIAN 2021-03-01 ENERGY PERFORMANCE FEEDBACK IS AN ESSENTIAL TOOL IN ADDRESSING THE CURRENT CLIMATE CRISIS. HOWEVER, THIS IS NOT SIMPLY ANOTHER THEORETICAL TEXT ABOUT ENERGY PERFORMANCE IN BUILDINGS. THIS BOOK IS FOR ANYONE WHO WANTS TO BETTER UNDERSTAND HOW ENERGY IS USED IN BUILDINGS, AND HOW TO DRIVE DOWN OPERATIONAL ENERGY USE - WHETHER YOU'RE AN ARCHITECT, STUDENT, CLIENT,

BUILDING SERVICES ENGINEER, CONTRACTOR, BUILDING OPERATOR OR OTHER STAKEHOLDER. FOCUSING ON EVIDENCE FROM FEEDBACK ON BUILDINGS IN USE, IT EXPLAINS WHAT IT TAKES TO GET THEM TO PERFORM AS EXPECTED, AS WELL AS THE REASONS WHY THEY OFTEN FAIL. ENERGY, PEOPLE, BUILDINGS DRAWS EXTENSIVELY ON THE FINDINGS OF STUDIES, UK GOVERNMENT-FUNDED BUILDING PERFORMANCE EVALUATIONS AND ON ORIGINAL RESEARCH INTO SEVEN CASE STUDIES FROM ACROSS THE UK AND ABROAD THAT HAVE ACHIEVED EXEMPLARY ENERGY USE THROUGH BUILDING PERFORMANCE FEEDBACK. PROVIDING A CLEAR ROADMAP TO UNDERSTANDING ASPECTS THAT IMPACT BUILDING USERS' COMFORT AND SATISFACTION, IT ALSO OUTLINES THE FACTORS BEHIND ENERGY USE AND HOW TO TRACK IT ACROSS THE LIFE OF A PROJECT TO ENSURE THAT YOUR BUILDING PERFORMS AS INTENDED. CASE STUDIES INCLUDE: THE EVERYMAN THEATRE, LIVERPOOL; ROCKY MOUNTAIN INSTITUTE INNOVATION CENTER, COLORADO; AND CARROWBRECK MEADOW, NORWICH. FEATURED ARCHITECTS: AHMM, AHR, ARCHITYPE, HAMSON BARRON SMITH, HAWORTH TOMPKINS, HENNING LARSEN ARCHITECTS AND ZGF ARCHITECTS.

DESIGNING ZERO CARBON BUILDINGS USING DYNAMIC SIMULATION METHODS - LJUBOMIR JANKOVIC 2017-06-23

IN ADDITION TO THE APPLICATION OF FUNDAMENTAL PRINCIPLES THAT LEAD TO A STRUCTURED METHOD FOR ZERO

CARBON DESIGN OF BUILDINGS, THIS CONSIDERABLY EXPANDED SECOND EDITION INCLUDES NEW ADVANCED TOPICS ON MULTI-OBJECTIVE OPTIMISATION; REVERSE MODELLING; REDUCTION OF THE SIMULATION PERFORMANCE GAP; PREDICTIVE CONTROL; NATURE-INSPIRED EMERGENT SIMULATION LEADING TO SKETCHES THAT BECOME 'ALIVE'; AND AN ALTERNATIVE ECONOMICS FOR ACHIEVING THE SUSTAINABILITY PARADIGM. THE BOOK FEATURES STUDENT DESIGN WORK FROM A MASTER'S PROGRAMME RUN BY THE AUTHOR, AND THEIR DESIGN SPECULATION FOR A HUMAN SETTLEMENT ON MARS. TASKS FOR SIMPLE SIMULATION EXPERIMENTS ARE AVAILABLE FOR THE MAJORITY OF TOPICS, PROVIDING THE MATERIAL FOR CLASSROOM EXERCISE AND GIVING THE READER AN EASY INTRODUCTION INTO THE FIELD. EXTENDED NEW CASE STUDIES OF ZERO CARBON BUILDINGS ARE FEATURED IN THE BOOK, INCLUDING SCHEMES FROM JAPAN, CHINA, GERMANY, DENMARK AND THE UK, AND PROVIDE THE READER WITH AN ENHANCED DESIGN TOOLBOX TO STIMULATE THEIR OWN DESIGN THINKING. *ZERO CARBON ARCHITECTURE AND BUILT ENVIRONMENT* - LAMIAA MOSTAFA 2014-02
ENERGY USED FOR CONSTRUCTION, OPERATION AND DEMOLITION OF THE BUILDING IS ONE OF THE MOST SIGNIFICANT SOURCES OF CARBON DIOXIDE EMISSIONS THIS WILL EVENTUALLY AFFECT THE FACADES AND LIFESPAN OF BUILDINGS AND THE ENTIRE ENVIRONMENT. THEREFORE IT IS IMPORTANT TO UNDERSTAND HOW TO DESIGN AN ENVELOPE OF

THE BUILDING THAT CONTROLS ENERGY FLOWS BETWEEN THE INTERIOR AND THE EXTERIOR AND THE KNOWLEDGE THAT WILL HELP TO IMPLEMENT APPROPRIATE ARCHITECTURAL DESIGN STRATEGIES. TO THIS CONTEXT, THIS BOOK AIMS AT EXPLAINING DIFFERENT METHODS TO REDUCE BUILDING EMISSIONS, WITH AN EMPHASIS ON ENERGY AND DEVELOPMENT OF AN ENVELOPE THAT WORKS SEAMLESSLY WITH THE HVAC SYSTEM (E.G. USE OF RENEWABLE ENERGY SOURCES AND ARCHITECTURE SOLUTIONS (PASSIVE AND ACTIVE SYSTEMS), NANOTECHNOLOGIES, USING COMPUTER SOFTWARE, IMPROVING THE EFFICIENCY OF HEATING, COOLING AND LIGHTING, ...ETC) IN ORDER TO RESCUE ENVIRONMENT AND ACHIEVE SUSTAINABILITY GOALS. THIS BOOK SHOWS HOW CAN ARCHITECTS, GOVERNMENTS AND OCCUPANTS USE THE ZERO CARBON ARCHITECTURE STRATEGIES IN TERMS OF FUNCTION AND TO SERVE THE ARCHITECTURAL AESTHETICS IN REALITY PRACTICE AND SOLVING THIS PROBLEM

THE NEW NET ZERO - BILL MACLAY 2014

THE NEW THRESHOLD FOR GREEN BUILDING IS NOT JUST LOW ENERGY, IT'S NET-ZERO ENERGY. IN THE NEW NET ZERO, SUSTAINABLE ARCHITECT BILL MACLAY CHARTS THE PATH FOR DESIGNERS AND BUILDERS INTERESTED IN EXPLORING GREEN DESIGN'S NEW-FRONTIER NET-ZERO-ENERGY STRUCTURES THAT PRODUCE AS MUCH ENERGY AS THEY CONSUME AND ARE CARBON NEUTRAL. IN A NATION WHERE TRADITIONAL BUILDINGS USE ROUGHLY 40 PERCENT OF THE TOTAL FOSSIL

ENERGY, THE INTEREST IN NET-ZERO BUILDING IS GROWING ENORMOUSLY--AMONG BOTH DESIGNERS INTERESTED IN ADDRESSING CLIMATE CHANGE AND CONSUMERS INTERESTED IN ENERGY EFFICIENCY AND LONG-TERM SAVINGS. MACLAY, AN AWARD-WINNING NET-ZERO DESIGNER WHOSE BUILDINGS HAVE ACHIEVED HIGH-PERFORMANCE GOALS AT AFFORDABLE COSTS, MAKES THE CASE FOR A NET-ZERO FUTURE; EXPLAINS NET-ZERO BUILDING METRICS, INTEGRATED DESIGN PRACTICES, AND RENEWABLE ENERGY OPTIONS; AND SHARES HIS LESSONS LEARNED ON NET-ZERO TEAMBUILDING. DESIGNERS AND BUILDERS WILL FIND A WEALTH OF STATE-OF-THE-ART INFORMATION ON SUCH CONSIDERATIONS AS AIR, WATER, AND VAPOR BARRIERS; EMBODIED ENERGY; RESIDENTIAL AND COMMERCIAL NET-ZERO STANDARDS; MONITORING AND COMMISSIONING; INSULATION OPTIONS; COSTS; AND MORE. THE COMPREHENSIVE OVERVIEW IS ACCOMPANIED BY SEVERAL CASE STUDIES, WHICH INCLUDE INSTITUTIONAL BUILDINGS, COMMERCIAL PROJECTS, AND RESIDENCES. BOTH NEW-BUILDING AND RENOVATION PROJECTS ARE COVERED IN DETAIL. THE NEW NET ZERO IS GEARED TOWARD PROFESSIONALS EXPLORING NET-ZERO DESIGN, BUT ALSO SUITABLE FOR NONPROFESSIONALS SEEKING IDEAS AND STRATEGIES ON NET-ZERO OPTIONS THAT ARE BEAUTIFUL AND RENEWABLY POWERED.

NET ZERO ENERGY BUILDINGS - LINDA REEDER 2016-03-31

THIS BOOK PRESENTS 18 IN-DEPTH CASE STUDIES OF NET

ZERO ENERGY BUILDINGS—LOW-ENERGY BUILDING THAT GENERATE AS MUCH ENERGY AS THEY CONSUME OVER THE COURSE OF A YEAR—FOR A RANGE OF PROJECT TYPES, SIZES, AND U.S. CLIMATE ZONES. EACH CASE STUDY DESCRIBES THE OWNER'S GOALS, THE DESIGN AND CONSTRUCTION PROCESS, DESIGN STRATEGIES, MEASUREMENT AND VERIFICATION ACTIVITIES AND RESULTS, AND PROJECT COSTS. WITH A YEAR OR MORE OF POST-OCCUPANCY PERFORMANCE DATA AND OTHER PROJECT INFORMATION, AS WELL AS LESSONS LEARNED BY PROJECT OWNERS AND DEVELOPERS, ARCHITECTS, ENGINEERS, ENERGY MODELERS, CONSTRUCTORS, AND OPERATORS, EACH CASE STUDY ANSWERS THE QUESTIONS: WHAT WERE THE CHALLENGES TO ACHIEVING NET ZERO ENERGY PERFORMANCE, AND HOW WERE THESE CHALLENGES OVERCOME? HOW WOULD STAKEHOLDERS ADDRESS THESE ISSUES ON FUTURE PROJECTS? ARE THE OCCUPANTS SATISFIED WITH THE BUILDING? DO THEY FIND IT COMFORTABLE? IS IT EASY TO OPERATE? HOW CAN OTHER PROJECTS BENEFIT FROM THE LESSONS LEARNED ON EACH PROJECT? WHAT WOULD THE OWNERS, DESIGNERS, AND CONSTRUCTORS DO DIFFERENTLY KNOWING WHAT THEY KNOW NOW? A FINAL CHAPTER AGGREGATES PROCESSES TO ENGAGE IN AND PITFALLS TO AVOID WHEN APPROACHING THE CHALLENGES PECULIAR TO DESIGNING, CONSTRUCTING, AND OWNING A NET ZERO ENERGY BUILDING. BY PROVIDING A WEALTH OF COMPARABLE INFORMATION, THIS BOOK WHICH

WILL FLATTEN THE LEARNING CURVE FOR DESIGNING, CONSTRUCTING, AND OWNING THIS EMERGING BUILDING TYPE AND IMPROVE THE EFFECTIVENESS OF ARCHITECTURAL DESIGN AND CONSTRUCTION.

CARBON-NEUTRAL ARCHITECTURAL DESIGN - PABLO M. LA ROCHE 2016-04-19

THE ENERGY USED TO OPERATE BUILDINGS IS ONE OF THE MOST SIGNIFICANT SOURCES OF GREENHOUSE GAS EMISSIONS. TO LESSEN THE HUMAN IMPACT ON CLIMATE, IT IS NECESSARY TO REDUCE THESE BUILDING-RELATED EMISSIONS. NEW LEGISLATION, AS WELL AS MARKET AND FINANCIAL PRESSURES, ARE DRIVING ARCHITECTS AND DEVELOPERS TO CREATE LOW-CARBON BUILDINGS. WHILE IT IS POSSIBLE TO ACHIEVE MANY OF THESE REDUCTIONS THROUGH APPROPRIATE CLIMATE-RESPONSIVE DESIGN, MANY ARCHITECTS ARE NOT TRAINED TO DO THIS. FILLING AN URGENT NEED FOR A DESIGN REFERENCE IN THIS EMERGING FIELD, CARBON-NEUTRAL ARCHITECTURAL DESIGN DESCRIBES HOW TO REDUCE BUILDING-RELATED GREENHOUSE GAS EMISSIONS THROUGH APPROPRIATE DESIGN TECHNIQUES. THIS FULL-COLOR BOOK PRESENTS STRATEGIES AND METHODS TO ACHIEVE CO₂ REDUCTIONS, WITH AN EMPHASIS ON CONTROL OF ENERGY FLOWS THROUGH THE BUILDING ENVELOPE AND PASSIVE HEATING AND COOLING STRATEGIES. STRATEGIES FOR DESIGNING BUILDINGS WITH A SMALLER CARBON FOOTPRINT EXAMINING CLIMATE CHANGE AND ITS RELATIONSHIP WITH BUILDINGS, THE BOOK BEGINS

WITH A LOOK AT THE SOURCES OF EMISSIONS AND HOW THESE ARE PRODUCED AS A RESULT OF INTERACTIONS BETWEEN BUILDINGS AND THE SURROUNDING ENVIRONMENT. IT THEN INTRODUCES A CARBON-NEUTRAL ARCHITECTURAL DESIGN PROCESS (CNDP) AND A ROADMAP THAT CAN BE ADJUSTED FOR DIFFERENT TYPES OF PROJECTS. DISCUSSING CLIMATE ANALYSIS AND SOLAR GEOMETRY, THE BOOK EXPLORES HOW UNDERSTANDING THE CLIMATE WHERE A BUILDING IS LOCATED HELPS TO IDENTIFY THE DESIGN STRATEGIES THAT ARE BEST SUITED TO THAT LOCATION—WHETHER WARM AND HUMID, WARM AND DRY, TEMPERATE, OR COLD. IT LOOKS AT PSYCHROMETRICS AND HOW TO ACHIEVE THERMAL COMFORT WITH MINIMUM EMISSIONS. THE BOOK ALSO EXPLAINS HOW BUILDING FABRIC CAN BE USED TO CONTROL ENERGY FLOWS BY CONDUCTION, RADIATION, AND CONVECTION—HELPING TO REDUCE OVERHEATING AND OVERCOOLING—AND HOW TO INCORPORATE PASSIVE COOLING AND HEATING SYSTEMS THROUGH APPROPRIATE DESIGN. THE BOOK INCLUDES USEFUL REFERENCES, EQUATIONS, AND ILLUSTRATIONS, AS WELL AS A COMPARISON OF FREE CARBON COUNTING TOOLS THAT CAN BE USED FOR RESIDENTIAL BUILDING DESIGN. DRAWING ON THE AUTHOR’S EXTENSIVE EXPERIENCE IN TEACHING AND PRACTICE, THIS IS A VALUABLE RESOURCE FOR ANYONE WHO WANTS TO REDUCE THE CARBON FOOTPRINT OF BUILDINGS. FIND MORE STUDY RESOURCES AT THE AMERICAN INSTITUTE OF

ARCHITECTS’ CARBON NEUTRAL DESIGN PROJECT WEB SITE. WHAT’S NEXT FOR GREEN BUILDING? SEE WHAT DR. LA ROCHE HAS TO SAY IN THIS VIDEO ON THE HMC ARCHITECTS BLOG. **ZERO-ENERGY BUILDINGS** - JESUS ALBERTO PULIDO ARCAS 2020-12-16

THE BUILDING INDUSTRY IS ONE OF THE LARGEST ENERGY CONSUMERS AND COUNTRIES ALL OVER THE WORLD ARE STRIVING TO DESIGN BUILDINGS THAT SATISFY THE USER’S EXPECTATIONS WHILE CONTAINING THEIR ENERGY CONSUMPTION. IN THIS CONTEXT, ZERO-ENERGY BUILDINGS HAVE EMERGED AS A TECHNOLOGICAL PARADIGM THAT CAN SOLVE THIS GLOBAL ISSUE, BUT ITS IMPLEMENTATION IN DIFFERENT CONTEXTS HAS BROUGHT A PROFOUND DEBATE ABOUT ITS TECHNICAL, SOCIAL, AND ENVIRONMENTAL LIMITATIONS. THANKS TO CONTRIBUTIONS FROM A VARIETY OF SCHOLARS FROM DIFFERENT COUNTRIES, THIS BOOK EXPLORES DIFFERENT ASPECTS OF THE ZERO-ENERGY BUILDINGS AND GIVES THE READER A BROAD VIEW OF THE FEASIBILITY OF IMPLEMENTATION IN DIFFERENT CONTEXTS.

TOWARDS NET ZERO CARBON EMISSIONS IN THE BUILDING INDUSTRY - ALI SAYIGH 2022-11-08

TOWARDS NET ZERO IN THE BUILDING INDUSTRY LOOKS AT THE CONTRIBUTIONS THAT THE BUILDING AND CONSTRUCTION INDUSTRY CAN (AND MUST) MAKE TO HELP ACHIEVE NET ZERO CARBON EMISSIONS. THE BUILDING INDUSTRY ACCOUNTS FOR CLOSE TO 40% OF GLOBAL EMISSIONS AND THIS BOOK

BRINGS TOGETHER A GLOBAL GROUP OF CONTRIBUTORS FROM 15 COUNTRIES TO EXAMINE WAYS IN WHICH THE INDUSTRY CAN HELP WITH OVERALL CO₂ REDUCTION. COVERAGE INCLUDES FACTORS SUCH AS BUILDING DESIGN STRATEGY, MATERIALS SELECTION, USE OF LOCAL MATERIALS WITH A LOW CARBON IMPRINT, RENEWABLE ENERGY USE, ENERGY CONSERVATION, GREENERY AND APPROPRIATE AESTHETICS, BUILDING SIZE AND SCALE, CLIMATE SUITABILITY, BUILDING FUNCTIONALITY AND COMFORT, MATERIAL RECYCLING, AND ADOPTION OF GREEN POLICIES. CHAPTER 6 IS AVAILABLE OPEN ACCESS UNDER A CREATIVE COMMONS ATTRIBUTION 4.0 INTERNATIONAL LICENSE VIA [LINK.SPRINGER.COM](http://link.springer.com).

DESIGN PROFESSIONAL'S GUIDE TO ZERO NET ENERGY BUILDINGS - CHARLES ELEY 2016-11-15

IN THE DESIGN PROFESSIONAL'S GUIDE TO ZERO NET ENERGY BUILDINGS, CHARLES ELEY DRAWS FROM OVER 40 YEARS OF HIS OWN EXPERIENCE, AND INTERVIEWS WITH OTHER INDUSTRY EXPERTS, TO LAY OUT THE PRINCIPLES FOR ACHIEVING ZERO NET ENERGY (ZNE) BUILDINGS, WHICH PRODUCE AS MUCH ENERGY AS THEY USE OVER THE COURSE OF A YEAR. ELEY EMPHASIZES THE IMPORTANCE OF BUILDING ENERGY USE IN ACHIEVING A SUSTAINABLE FUTURE; DESCRIBES HOW BUILDING ENERGY USE CAN BE MINIMIZED THROUGH SMART DESIGN AND ENERGY EFFICIENCY TECHNOLOGIES; AND PRESENTS PRACTICAL INFORMATION ON HOW TO INCORPORATE RENEWABLE ENERGY TECHNOLOGIES TO MEET THE LOWERED ENERGY NEEDS. THE

BOOK SHOWS THE READER THROUGH EXAMPLES AND EXPLANATIONS THAT THESE SOLUTIONS ARE VIABLE AND COST EFFECTIVE.

NET ZERO ENERGY BUILDING - MING HU 2019-03-25

WHAT DO WE MEAN BY NET ZERO ENERGY? ZERO OPERATING ENERGY? ZERO ENERGY COSTS? ZERO EMISSIONS? THERE IS NO ONE ANSWER: APPROACHES TO NET ZERO BUILDING VARY WIDELY ACROSS THE GLOBE AND ARE INFLUENCED BY DIFFERENT ENVIRONMENTAL AND CULTURAL CONTEXTS. *NET ZERO ENERGY BUILDING: PREDICTED AND UNINTENDED CONSEQUENCES* PRESENTS A COMPREHENSIVE OVERVIEW OF VARIATIONS IN 'NET ZERO' BUILDING PRACTICES. DRAWING ON EXAMPLES FROM COUNTRIES SUCH AS THE UNITED STATES, UNITED KINGDOM, GERMANY, JAPAN, HONG KONG, AND CHINA, MING HU EXAMINES DIVERSE APPROACHES TO NET ZERO AND REVEALS THEIR INTENDED AND UNINTENDED CONSEQUENCES. EXISTING APPROACHES OFTEN FOCUS ON OPERATING ENERGY: HOW TO MAKE BUILDINGS MORE EFFICIENT BY REDUCING THE ENERGY CONSUMED BY CLIMATE CONTROL, LIGHTING, AND APPLIANCES. HU GOES BEYOND THIS BY ANALYZING OVERALL ENERGY CONSUMPTION AND ENVIRONMENTAL IMPACT ACROSS THE ENTIRE LIFE CYCLE OF A BUILDING—RANGING FROM THE MANUFACTURE OF BUILDING MATERIALS TO TRANSPORTATION, RENOVATION, AND DEMOLITION. IS NET ZERO BUILDING STILL ACHIEVABLE ONCE WE LOOK AT THESE FACTORS? WITH CLEAR IMPLICATIONS FOR FUTURE PRACTICE, THIS IS KEY

READING FOR PROFESSIONALS IN BUILDING DESIGN, ARCHITECTURE, AND CONSTRUCTION, AS WELL AS STUDENTS ON SUSTAINABLE AND GREEN ARCHITECTURE COURSES.

Ecohouse: A Design Guide - CHRISTOPHER DAY
2007-08-15

ECOHOUSE IS AN EXCITING AND TIMELY TEXT THAT TELLS YOU HOW TO DESIGN LOW ENERGY, ENVIRONMENTALLY FRIENDLY BUILDINGS TODAY. IT ALSO PROVIDES THE FOUNDATIONS FOR BUILDING DESIGN IN A WARMING WORLD, AND STEPPING STONES TOWARDS THE ZERO-CARBON EMISSION BUILDINGS OF TOMORROW. SUE ROAF IS FAMED FOR HER APPROACH TO DESIGN AND HER AWARENESS OF ENERGY EFFICIENCY. HERE SHE REVEALS THE CONCEPTS, STRUCTURES AND TECHNIQUES THAT LIE BEHIND THE REALIZATION OF HER IDEALS. BY USING HER OWN HOUSE AS A CASE-STUDY ROAF GUIDES THE READER THROUGH THE IDEAS FOR ENERGY EFFICIENT DESIGN OR 'ECO DESIGN'. THIS GUIDE TO THE ECOHOUSE ALSO EXPLORES 21 CASE-STUDIES FROM AROUND THE WORLD, FROM NORWAY AND SWEDEN TO INDIA AND JAPAN, ARGENTINA AND MEXICO. CHAPTERS BY CHRISTOPHER DAY, KATERINE BOHN AND ANDRE VILJOEN ON ECOLOGICAL BUILDING MATERIALS AND METHODS AND A CONTRIBUTION BY ROBERT AND BRENDA VALE - ALL EXPERTS IN THIS FIELD ECOHOUSE HAS A REGULARLY UPDATED COMPANION WEB SITE PROVIDING FURTHER INFORMATION ON ALL ISSUES RELATING TO ECOHOUSE AND ECO DESIGN. LOG ON TO

WWW.BH.COM/COMPANIONS/ECOHOUSE FOR A DIRECT LINK.

GOING TO ZERO - PABLO LA ROCHE 2017-01-08

TYPICALLY ARCHITECTURE STUDENTS ARE ONLY INTRODUCED TO ENERGY MODELING IN ELECTIVE GRADUATE OR ADVANCED UNDERGRADUATE SEMINARS, AND WHEN THEY ARE INTRODUCED TO THE DESIGN OF ZERO NET ENERGY, LOW CARBON BUILDINGS IT IS ONLY IN UPPER DIVISION STUDIOS. BECAUSE THESE COURSES ARE TYPICALLY NOT REQUIRED, ONLY A SMALL FRACTION OF ARCHITECTURE STUDENTS IN SOME UNIVERSITIES ARE ACTUALLY ABLE TO TAKE THEM. THIS IS NOT ENOUGH. TO REDUCE OUR IMPACT ON CLIMATE CHANGE WE MUST INTRODUCE THESE CONCEPTS TO ALL ARCHITECTURE STUDENTS. THIS BOOK DESCRIBES A PROJECT DONE IN A REQUIRED ENVIRONMENTAL CONTROLS COURSE TO INTRODUCE STUDENTS TO THE DESIGN OF ZERO NET ENERGY BUILDINGS USING ENERGY MODELING. STUDENTS FIRST ANALYZED SELECTED MID CENTURY BUILDINGS AS THEY WERE ORIGINALLY DESIGNED MANY YEARS AGO, COMPARING THEIR PERFORMANCE WITH THAT OF A CALIFORNIA ENERGY CODE COMPLIANT BUILDING (TITLE 24-2013), AND THEN MADE ALL NECESSARY MODIFICATIONS TO IMPROVE BUILDING PERFORMANCE, BEYOND CODE, AND ACHIEVE A NET ZERO ENERGY BUILDING.

NET ZERO ENERGY DESIGN - THOMAS HOOTMAN
2012-10-15

CONVENIENTLY ORGANIZED AND PACKED WITH ROBUST TECHNICAL CONTENT AND CLEAR EXPLANATIONS OF KEY

PRINCIPLES WRITTEN BY AN ARCHITECT WHO IS THE DIRECTOR OF SUSTAINABILITY AT A GLOBAL ARCHITECTURE FIRM, NET ZERO ENERGY DESIGN IS A PRACTICAL GUIDE FOR ARCHITECTS AND RELATED CONSTRUCTION PROFESSIONALS WHO WANT TO DESIGN AND BUILD NET ZERO ENERGY COMMERCIAL ARCHITECTURE. IT OFFERS NO-NONSENSE STRATEGIES, STEP-BY-STEP TECHNICAL ANALYSIS, AND VALUABLE EXAMPLES, IN ADDITION TO DEVELOPED CASE STUDIES. WITH A FOCUS ON APPLICATION IN A VARIETY OF BUILDING TYPES AND SCALES, THE BOOK ALSO DEVELOPS A BROAD-BASED UNDERSTANDING OF ALL THE INTEGRATED PRINCIPLES INVOLVED IN ACHIEVING NET ZERO ENERGY. THIS BOOK IS AN INDISPENSABLE RESOURCE FOR ANYONE VENTURING INTO NET ZERO ENERGY DESIGN, CONSTRUCTION, AND OPERATION, AND IT ALSO SERVES AS AN EXCELLENT RESOURCE ON A VARIETY OF SUSTAINABLE DESIGN TOPICS. IMPORTANT FEATURES INCLUDE: ORGANIZATION BASED UPON THE COMMERCIAL BUILDING DELIVERY PROCESS ROBUST TECHNICAL CONTENT FOR USE IN ACTUAL PROJECT APPLICATIONS ANALYSIS EXAMPLES THAT DEMONSTRATE KEY TECHNICAL PRINCIPLES PLENTY OF DESIGN DATA FOR USE AS A VALUABLE DESIGN RESOURCE ABUNDANT AND SOPHISTICATED INFORMATION GRAPHICS AND COLOR ILLUSTRATIONS AND PHOTOGRAPHS A DISTINCT DESIGN FOCUS ON THE CONTENT THAT INSPIRES ADOPTION OF PRINCIPLES INTO PROJECTS

THE SUSTAINABLE TALL BUILDING - PHILIP OLDFIELD
2019-03-27

THE SUSTAINABLE TALL BUILDING: A DESIGN PRIMER IS AN ACCESSIBLE AND HIGHLY ILLUSTRATED GUIDE, WHICH PRIMES THOSE INVOLVED IN THE DESIGN AND RESEARCH OF TALL BUILDINGS TO DRAMATICALLY IMPROVE THEIR PERFORMANCE. USING A MIXTURE OF ORIGINAL RESEARCH AND ANALYSIS, BEST-PRACTICE DESIGN THINKING AND A DETAILED LOOK AT EXEMPLAR CASE STUDIES, AUTHOR PHILIP OLDFIELD TAKES THE READER THROUGH THE ARCHITECTURAL IDEAS, ENGINEERING STRATEGIES AND CUTTING-EDGE TECHNOLOGIES THAT ARE AVAILABLE TO THE TALL BUILDING DESIGN TEAM. THE BOOK TAKES A GLOBAL PERSPECTIVE, EXAMINING HIGH-RISE DESIGN IN DIFFERENT CLIMATES, CULTURES AND CONTEXTS. IT CONSIDERS COMMON FUNCTIONS SUCH AS HIGH-RISE HOUSING AND OFFICES, TO MORE RADICAL DESIGNS SUCH AS VERTICAL FARMING AND VERTICAL CEMETERIES. INNOVATION IS PROVIDED BY EXAMINING NOT ONLY THE ENVIRONMENTAL PERFORMANCE OF TALL BUILDINGS BUT ALSO THEIR SOCIAL SUSTAINABILITY, GUIDING THE READER THROUGH STRATEGIES TO CREATE SUCCESSFUL COMMUNITIES AT HEIGHT. THE BOOK STARTS BY CRITICALLY APPRAISING THE SUSTAINABILITY OF TALL BUILDING ARCHITECTURE PAST AND PRESENT, BEFORE DEMONSTRATING INNOVATIVE WAYS FOR FUTURE TALL BUILDINGS TO BE DESIGNED. THESE INCLUDE THEMES SUCH AS CLIMATICALLY RESPONSIVE ARCHITECTURE, SITING A TALL BUILDING IN THE CITY, ZERO-CARBON TOWERS, SKYGARDENS AND COMMUNITY SPACES AT HEIGHT, SUSTAINABLE

STRUCTURAL SYSTEMS AND NOVEL FACADES. IN DOING SO, THE BOOK PROVIDES ESSENTIAL READING FOR ARCHITECTS, ENGINEERS, CONSULTANTS, DEVELOPERS, RESEARCHERS AND STUDENTS ENGAGED WITH SUSTAINABLE DESIGN AND HIGH-RISE ARCHITECTURE.

REGENERATIVE AND POSITIVE IMPACT ARCHITECTURE -
SHADY ATTIA 2017-09-19

THIS BOOK IS A GUIDE TO ENERGY EFFICIENCY AND ENVIRONMENTAL IMPACT ASSESSMENT IN HIGH-PERFORMANCE BUILDINGS PROJECTS. IT COMPARES FOUR STATE-OF-THE-ART BUILDINGS TO EXAMINE THE STEPS NEEDED FOR A TRANSITION FROM NEGATIVE IMPACT REDUCTION ARCHITECTURE TO POSITIVE IMPACT REGENERATIVE ARCHITECTURE, UTILIZING LIFE CYCLE ANALYSIS. THE BOOK PROVIDES A SOLID GROUNDING IN THE AREAS OF ENERGY-EFFICIENT BUILDING AND BUILDING MATERIALS LIFE-CYCLE ASSESSMENT, DISCUSSING CARBON EFFICIENCY WITHIN A WIDER CONTEXT THAT INCLUDES ITS TECHNICAL, SOCIO-CULTURAL AND ENVIRONMENTAL DIMENSIONS AND COVERS THE KEY AREAS FOR GREEN BUILDINGS PERFORMANCE (OPERATIONAL AND EMBODIED ENERGY). THE ANALYSIS AND COMPARISON OF FOUR CASE STUDIES OF STATE-OF-ART MODERN BUILDING PROJECTS IN EUROPE AND NORTH AMERICA SERVE AS INSPIRING EXAMPLES FOR ARCHITECTS AND BUILDING PROFESSIONALS IN THE FIELDS OF HIGH PERFORMANCE BUILDINGS, ECOLOGICAL MATERIALS AND CARBON EFFICIENCY.

ARCHITECTURE & SUSTAINABLE DEVELOPMENT (VOL.2) -
MAGALI BODART 2011-07

THIS BOOK OF PROCEEDINGS PRESENTS THE LATEST THINKING AND RESEARCH IN THE RAPIDLY EVOLVING WORLD OF ARCHITECTURE AND SUSTAINABLE DEVELOPMENT THROUGH 255 SELECTED PAPERS BY AUTHORS COMING FROM OVER 60 COUNTRIES.

NET ZERO ENERGY BUILDINGS (NZEB) - SHADY ATTIA
2018-03-26

NET ZERO ENERGY BUILDINGS (NZEB): CONCEPTS, FRAMEWORKS AND ROADMAP FOR PROJECT ANALYSIS AND IMPLEMENTATION PROVIDES READERS WITH THE ELEMENTS THEY NEED TO UNDERSTAND, COMBINE AND CONTEXTUALIZE DESIGN DECISIONS ON NET ZERO ENERGY BUILDINGS. THE BOOK IS BASED ON LEARNED LESSONS FROM NZEB DESIGN, CONSTRUCTION, OPERATION THAT ARE INTEGRATED TO BRING THE MOST RELEVANT TOPICS, SUCH AS MULTIDISCIPLINARITY, CLIMATE SENSITIVITY, COMFORT REQUIREMENTS, CARBON FOOTPRINTS, CONSTRUCTION QUALITY AND EVIDENCE-BASED DESIGN. CHAPTERS INTRODUCE THE CONTEXT OF HIGH PERFORMANCE BUILDINGS, PRESENT OVERVIEWS OF NZEB, COVER THE PERFORMANCE THRESHOLDS FOR EFFICIENT BUILDINGS, COVER MATERIALS, MICRO-GRID AND SMART GRIDS, CONSTRUCTION QUALITY, PERFORMANCE MONITORING, POST OCCUPANCY EVALUATION, AND MORE. OFFERS A ROADMAP FOR ENGAGING IN ENERGY EFFICIENCY IN HIGH PERFORMANCE

BUILDINGS PROJECTS COMBINES SOLID GROUNDING IN CORE CONCEPTS, SUCH AS ENERGY EFFICIENCY, WITH A WIDER CONTEXT THAT INCLUDES THE TECHNICAL, SOCIO-CULTURAL AND ENVIRONMENTAL DIMENSIONS COVERS KEY AREAS FOR DECISION-MAKING PROVIDES A LOGICAL FRAMEWORK TO ANALYZE PROJECTS IN THE CONTEXT OF ENVIRONMENTAL CHANGE PRESENTS WORLDWIDE EXAMPLES AND CASES FOR DIFFERENT CLIMATES AND SOCIETIES

CARBON-NEUTRAL ARCHITECTURAL DESIGN - PABLO M. LA ROCHE 2017-07-14

THE ENERGY USED TO OPERATE BUILDINGS IS ONE OF THE MOST SIGNIFICANT SOURCES OF GREENHOUSE GAS EMISSIONS. WHILE IT IS POSSIBLE TO REDUCE EMISSIONS THROUGH CLIMATE-RESPONSIVE DESIGN, MANY ARCHITECTS ARE NOT TRAINED TO DO THIS. FILLING AN URGENT NEED FOR A DESIGN REFERENCE IN THIS EMERGING FIELD, THIS BOOK DESCRIBES HOW TO REDUCE BUILDING-RELATED GREENHOUSE GAS EMISSIONS THROUGH APPROPRIATE DESIGN TECHNIQUES. IT PRESENTS STRATEGIES TO ACHIEVE CO₂ REDUCTIONS, WITH AN EMPHASIS ON CONTROL OF ENERGY FLOWS THROUGH THE BUILDING ENVELOPE AND PASSIVE HEATING AND COOLING STRATEGIES. THIS NEW, REVISED EDITION IS UPDATED

THROUGHOUT, AND INCLUDES A NEW CHAPTER ON BUILDING SIMULATIONS.

HANSJUERG LEIBUNDGUT 2016-09-08

ZERO EMISSION DURING OPERATION - THIS HAS TO BE THE TARGET FOR BUILDINGS IN THE NEAR FUTURE. THIS BOOK APPROACHES THIS GOAL WITH THE APPLICATION OF THE THERMODYNAMIC CONCEPT OF EXERGY TO THE BUILT ENVIRONMENT, ALLOWING NEW DESIGN AND TECHNOLOGY CONCEPTS THAT GO BEYOND MERE ENERGY SAVING . THIS APPROACH REOPENS RIGID PASSIVE DESIGN PARADIGMS AND OFFERS MORE ARCHITECTURAL FREEDOM WHILE ENSURING THE HIGH PERFORMANCE OF BUILDINGS. BY INTRODUCING NEW APPROACHES FOR THE UNDERSTANDING AND ANALYSIS OF BUILDING SYSTEMS AND THE DYNAMIC INTERACTION BETWEEN THE ACTIVE AND PASSIVE ELEMENTS OF A BUILDING, IT DESCRIBES KEY COMPONENTS REQUIRED FOR LOWEX BUILDING SYSTEMS. THE BUILDING CASES ANALYSED COVER CLIMATES AS DIFFERENT AS THE MODERATE CLIMATE OF EUROPE AND THE HOTHUMID TROPICS OF SOUTHEAST ASIA AND PROVIDE DETAILED INVESTIGATION OF BOTH THE CONCEPTUAL AND DEPLOYMENT DETAILS. "

LOWEX BUILDING DESIGN FOR ZEROEMISSION ARCHITECTURE