

Contents

Preface	IX
Section 1	
Materials	1
Chapter 1	3
Complementary Building Concept: Wooden Apartment Building: The Noppa toward Zero Energy Building Approach <i>by Markku Karjalainen, Hüseyin Emre Ilgin, Marie Yli-Äyhö and Anu Soikkeli</i>	
Chapter 2	17
An Aggregated Embodied and Operational Energy Approach <i>by Shahaboddin Resalati</i>	
Chapter 3	35
Coalash as Sustainable Material for Low Energy Building <i>by Avijit Ghosh</i>	
Section 2	
Design	55
Chapter 4	57
Wooden Facade Renovation and Additional Floor Construction for Suburban Development in Finland <i>by Markku Karjalainen, Hüseyin Emre Ilgin, Lauri Metsäranta and Markku Norvasuo</i>	
Chapter 5	73
An Integrated Design Process in Practice: A Nearly Zero Energy Building at the University of Brasília - Brazil <i>by Cláudia Naves David Amorim, Joara Cronemberger Ribeiro Silva, Caio Frederico e Silva, Thiago Montenegro Góes, Ayana Dantas de Medeiros, João Manoel Dias Pimenta, Marco Antonio Egito, Adolfo Bauchspiess, Loana Nunes Velasco and José Manoel Morales Sánchez</i>	

Chapter 6	99
Developing a Sustainable Solar-Residence Architecture Like a Home Unit without Energy Consumption from the Power Grid by <i>Fernanda Antonio, Claudia Terezinha de Andrade Oliveira, Fabio Pires and Miguel Edgar Morales Udaeta</i>	
Chapter 7	125
Evaluation of Energy Efficiency of Buildings Based on LCA and LCC Assessment: Method, Computer Tool, and Case Studies by <i>Suzana Domjan, Ciril Arkar, Rok Fink and Sašo Medved</i>	
Section 3	
New Approaches	153
Chapter 8	155
Introduction of ZEB Technology in Japan by <i>Jihui Yuan</i>	
Chapter 9	173
Adaptive Thermal Comfort of an Office for Energy Consumption-Famagusta Case by <i>Halil Zafer Alibaba</i>	
Chapter 10	191
Holistic and Affordable Approach to Supporting the Sustainability of Family Houses in Cold Climates by Using Many Vacuum-Tube Solar Collectors and Small Water Tank to Provide the Sanitary Hot Water, Space Heating, Greenhouse, and Swimming Poole Heating Demands by <i>Luis E. Juanicó</i>	
Chapter 11	217
Highlighting the Design and Performance Gaps: Case Studies of University Buildings by <i>Karishma Kashyap, Usha Iyer-Raniga and Mary Myla Andamon</i>	
Chapter 12	235
Energy-Efficient Retrofit Measures to Achieve Nearly Zero Energy Buildings by <i>Nimish Bilorla and Nastaran Abdollahzadeh</i>	