

Contents

Part I Mediterranean Future Cities Vision

1	Refurbishment of Goris Old Bath Building as Tool for Historic Urban Environment Green Traditions Rehabilitation	3
	Nune Petrosyan and Marina Bunatyan	
2	Climate Adaptation Action: The Role of Clean Energy and Strategic Action Plans of South Mediterranean Cities	11
	Mohsen Aboulnaga, Naguib Amin, and Bruno Rebelle	
3	Smart and Sustainable Urbanism with Identity in Mediterranean Cities	35
	Derya Oktay	
4	Climate Action: Urban Farming as an Innovative Tool for Regenerating Cities to Be Sustainable—Case of the City of Conegliano, Italy	53
	Mohsen M. Aboulnaga, Youssef M. AbouZied, and Sara S. Abouelsoud	
5	Future Cities for Climate Action: Automated Code Compliance Checking in Reference to Energy Efficiency Building Regulations ..	71
	Asmaa S. Eid, Mohsen M. Aboulnaga, and Ayman H. Mahmoud	
6	Urban Spaces for Playing in Thermal Comfort Conditions: A Case Study	87
	V. Dessi and R. Eltonoubey	

Part II Resilience and Adopting to Change

7	The Diurnal and Nocturnal Aspects of Urban Heat Island During the four Seasons—Case of Casablanca	103
	L. El Ghazouani, M. Mansour, A. Lachir, M. Faouzi Smiej, and N. Laaroussi	

8	Green Healthcare System: Main Features in Supporting Sustainability of Healthcare System—A Review	113
	Jazla Fadda	
9	Urban Grapevine: Visions of Regenerative Multifamily Housing in Washington DC	129
	Michael Binder, Marcie Meditch, Lael Taylor, and Jenny Wienckowski	
10	Towards Resilient Cities: Improving Unplanned Urban Areas—Strategic Environmental Assessment and Upgrading Guidelines in Developing Countries	143
	Mai M. Barakat, Mohsen M. Aboulnaga, and Mona F. Badran	

Part III Mediterranean Green Architecture

11	Paving the Way Towards Zero Energy Hospitals in the Mediterranean Region	159
	Despina Serghides, Stella Dimitriou, and Ioanna Kyprianou	
12	Vernacular Elements as Indicators for Sustainable Interior Environment: Housing in Jordan	169
	Dana K. Amro and Suheir M. S. Ammar	
13	Green Sustainable Regional Development and Digital Era	181
	Narcisa Roxana Moșteanu	
14	The Role of the Architectural Survey in the Sustainable Refurbishment of the Historical Building Heritage	199
	Paola Puma	
15	People and Place: Identity Survey and Responsible Design for Architectural Resilient Regeneration Process	205
	Paola Puma and Antonella Trombadore	

Part IV Historic Buildings and Refurbishment

16	Energy Retrofit Cost-Optimal Design Solutions in Social Housing: The Case of Three Tower Buildings of the 1980s	221
	Michele Morganti, Valerio Vigoni, Edoardo Currà, and Alessandro Rogora	
17	Enhancing Energy Consumption Using BIM: A Case Study of Egyptian Palace	237
	Mohamed Marzouk, Maryam ElSharkawy, and Aya Eissa	
18	Passive Design Strategies of Colonial Mosques in Malaysia	247
	Aliyah Nur Zafirah Sanusi, Fadzidah Abdullah, Aida Kesuma Azmin, and Mohd Hisyamuddin Kassim	

19 Winery and Oil-Factory Recovery and Regeneration in Veglie: Bioclimatic and Sustainable Principles 263
Dora Francesca

Part V Passive Cooling and Daylighting

20 Sustainable Construction Methods and Materials in Hot Arid Climatic Region of Iran 277
Seyedehmamak Salavatian

Part VI Eco-materials and Green Technologies

21 Impacts of Exploiting Nanocoating on Buildings' Façades to Improve Air Quality in Megacities, Mitigate Climate Change and Attain Livability 293
Ehsan M. Elhennawi and Mohsen M. Aboulnaga

22 External Insulation Systems for Buildings with Complex Façades in Urban Historic Centers 305
Paolo Carli, Alessandro Rogora, and Alessandro Trevisan

23 European First Recyclable Façade System with Reclosable Fastener Fixation: Research Development, Grants of Patents, Pre-certification Testings and Product Publication of Façade System StoSustain R 319
Ferdinand Oswald

24 Impact of Traditional Architecture on the Thermal Performances of Building in South Morocco 339
Karima EL Azhary, Mohamed Ouakarrouch, Najma Laaroussi, Mohammed Garoum, and Majid Mansour

25 Assessing Optimal *U*-value in Residential Buildings in Temperate Climate Conditions Considering Massive Dynamic Simulation and Statistical Uncertainty 349
Giacomo Chiesa, Andrea Acquaviva, Lorenzo Bottaccioli, Mario Grossi, Francesca Pacella, Annalisa Pelati, and Stefania Titone

26 Evaluation of Multifunctional Aspects of a Green Roof in Mitigating the Negative Effects of Urbanization in Mediterranean Environment 371
Pratesi Martina, Cinelli Fabrizio, and Santi Giovanni

Part VII Renewable Energy in Buildings and Cities

27 Solar and Wind Energy Will Supply More Than 50% of World Electricity by 2030 385
Ali Sayigh

28	Feasibility Study of a Low-Carbon House in Tabriz, Iran	401
	Hossein Mirzaii and Sanaz Hariri Shabestari	
29	The Development of Renewable Energy in Buildings in UAE	413
	Riadh H. Al-Dabbagh	
30	Green Buildings to Approach Sustainable Buildings by Integrating Wind and Solar Systems with Smart Technologies	433
	Abdul Salam Darwish	
31	Energy Balance Analysis for an Island PV Station Used for EV Charging on the Basis of Net Metering	447
	J. K. Kaldellis, G. Spyropoulos, and K. Christopoulos	
32	Smart Active Envelope Solutions, Integration of Photovoltaic/Thermal Solar Concentrator in the Building Façade	459
	Lucia Ceccherini Nelli and Alberto Reatti	
33	A Development of System Control Strategy Applied to PV Pumping System	469
	Sarah Adoulraziq and Med Amine Abdourraziq	
34	Analysis of Wind Energy Potential Inside a Tunnel Located on the Highway	481
	Kamil M. Yousif, Diyar A. Bleej, Alan I. Saeed, and Rezheen A. Bleej	
35	The Potential of Solar Thermal in Europe	491
	Marta Szabo	

Part VIII Urban Farming and Green Infrastructure

36	Urban Regeneration with Rooftop Farming Pilot Projects	501
	Lucia Ceccherini Nelli	
37	The Imitation Game: The Urban Sustainability Game as an Experience of Participation, Knowledge, Evaluation, and Project Sharing	513
	Alessandro Rogora, Paolo Carli, and Michele Morganti	
38	Efficient Energy Conversion Contribution in Urban Area Transition Towards Smart Cities	521
	Andrea Rocchetti and Filippo Nocentini	
39	Short Considerations on Urban Dynamics	535
	Ruxandra Crutescu Gherasim	

40 The Role of Urban Farming in Revitalizing Cities for Climate Change Adaptation and Attaining Sustainable Development: Case of the City of Conegliano, Italy	545
Haidy Mousa, May Elhadidi, Hadil Abdelhafez, Pietro Tonini, Lorenzo Fellin, Antonella Frongia, Virginia Castellucci, and Mohsen Aboulnaga	
Part IX Policy, Education, Training and Finance	
41 Comfortable Places for Moving and Rest Along Cycle Paths	581
Valentina Dessi	
42 Energy Auditor and Building Certification: Three School Buildings Case Studies in Florence, Italy	589
Lucia Ceccherini Nelli and Alessandra Donato	
43 Fallacies and Misunderstandings About Global Warming	601
Don Swift-Hook	
44 Building Beauty: A New Program Teaching Students to Help Heal the World	611
Yodan Rofè, Sergio Porta, Susan Ingham, Christopher R. Andrews, Or Ettlinger, Paolo Robazza, and Maggie Moore Alexander	
45 Extreme Design: Preparing for a Different Future	623
Susan Roaf, Joao Pinelo Silva, and Manuel Correia Guedes	
46 Energy and Ecology Efficiency as a Chance for Cultural Heritage	639
Alessandra Battisti	
Index	649