Contents

Part I Hystoric Centers and Cultural Landscapes: Conservation and Management

Farmhouses in the Phlegrean Fields Between Archaeology and Architectural Palimpsest. A Multi-disciplinary Approach ........... 3
Renata Picone

Guidelines for Eco-efficiency in the UNESCO Site of Cinque Terre: An Example of Good Practice ........................................... 21
Luisa De Marco, Giovanna Franco and Anna Magrini

Planning for the Historic Built in Developing Countries: Challenges and Opportunities Through the Case Study of Multan (Pakistan) .... 33
Eleonora Bersani, Mariacristina Giambruno and Sonia Pistidda

New York City Local Law 11/98: Consequences of Administrative Regulations on the Conservation of Buildings .................... 45
Mariachiara Faliva

Antonello Sanna and Giuseppina Monni

Inventory, Preservation and Valorization of Historic Roads in Lombardy Region (Italy). Current Policies and Future Plans .......... 69
Alberta Cazzani and Camillo Sangiorgio
Part II  Architectural Heritage: Diagnosys, Conservation and Monitoring

Structural Monitoring of Historical Constructions: Increasing Knowledge to Minimize Interventions .......................... 83
Eva Coisson and Federica Ottoni

Monitoring of Cracks in Historic Concrete Structures Using Optical, Thermal and Acoustical Methods ......................... 93
Christiane Maierhofer, Rainer Krankenhagen, Philipp Myrach, Jeannine Meinhardt, Uwe Kalisch, Christiane Hennen, Rüdiger Mecke, Thomas Seidl and Michael Schiller

Monitoring Noise and Vibration in Santa Clara-a-Velha Monastery ............................................................. 103
Telmo Dias Pereira and Diogo Mateus

Testing and Monitoring for the Control of Strengthening Interventions of Santa Maria Gloriosa Dei Frari in Venice ........... 113
Alberto Lionello, Christian Rossi and Pier Paolo Rossi

Guidelines for the Evaluation of the Load-Bearing Masonry Quality in Built Heritage ................................. 127
Giuliana Cardani and Luigia Binda

Dynamic and Seismic Assessment of the Gabbia Tower in Mantua, Italy ....................................................... 141
Antonella Saisi, Carmelo Gentile, Marco Guidobaldi and Lorenzo Cantini

Integrated Measurement Techniques for the Monitoring of the Ancient Walls of Ferrara ...................................... 155
Alessio Furini, Maria Paternò, Alberto Pellegrinelli and Paolo Russo

Constructive Features and Seismic Vulnerability of Historic Centres Through the Rapid Assessment of Historic Building Stocks. The Experience of Ferrara, Italy ......................................................... 165
M. Dolce, E. Speranza, R. Dalla Negra, M. Zuppiroli and F. Bocchi

A Multidisciplinary Approach for the Assessment of Great Historical Structures: Ties of “Duomo di Milano” ............... 177
Mira Vasic, Dario Coronelli and Carlo Poggi
Contents

MOdihMA at Sforza Castle in Milano: Innovative Techniques for Moisture Detection in Historical Masonry ............................ 187
N. Proietti, D. Capitani, V. Di Tullio, R. Olmi, S. Priori, C. Riminesi, A. Sansonetti, F. Tasso and E. Rosina

The Chapel of the Blessed Virgin of Miracles: A Multidisciplinary Approach for the Project of Conservation and Reuse ................................................................. 199
Elisabetta Ciocchini, Aldo Maiocchi and Fabio Zangheri

Past, Present and Future of the Forgotten Places in the Ancient “Ospedale Maggiore” (Ca’ Granda) in Milan: Studies, Surveys, Analysis, Prospects and Projects ........................................................................... 211
Mariangela Carlessi and Alessandra Kluzer

Part III Architectural Heritage: Case Studies

Grancia of Cuna: From the Complexity of the Historical Building to a Composed Knowledge for the Project .................................................. 227
Silvia Dandria, Fabio Gabbielli, Marco Giamello, Elisabetta Giorgi, Andrea Magrini, Elena Manzoni and Fausto Randazzo

Earthquake and Enhancement: An Opportunity to Preserve the Medieval Castle of Fossa (L’Aquila, Italy) .............................................. 237
Caterina F. Carocci, Fabrizia Campisi and Irene Tranchina

Safety and Preservation of Saint Agata Church in Tussillo (L’Aquila, Italy) ......................................................................................... 247
Caterina F. Carocci and Anna Scudero

Promoting a Nineteenth-Century Italian Technology: The Crystal Skies of Milan Gallery “Vittorio Emanuele II” .......................... 257
Iva Stoyanova, Ornella Selvafolta and Amedeo Bellini

Gekko-den Case Study: The Process Surrounding the Preservation of Historical Wooden Architecture in Japan ........................ 271
Tanya L. Park

Anthropology of Design: How Traditional Korean Architecture Expands the Terms of Conservation, Collaboration, and Sustainable Management ........................................................................... 283
Pablo N. Barrera and Peter E. Bartholomew
Part IV 2D and 3D Digitization for Visual Presentation and Monitoring

Spherical Photogrammetry for Cultural Heritage
Metric Documentation: A Critical Review .......................... 301
Gabriele Fangi

The Piacenza Cathedral, from the Digital Survey to a Complete Multimedia Documentation .................. 313
Giorgio Verdiani, Alessandro Peruzzi and Massimo Gualandi

Documenting Lost Heritage: The Experience of the Survey of Architectures Damaged by the Earthquake in the Emilia Area, Italy ............................. 323
Anna Maria Manferdini

Massive 3D Digitization of Museum Contents ...................... 335
Gabriele Guidi, Sara Gonizzi Barsanti, Laura Loredana Micoli and Michele Russo

Documentation and Analysis of 3D Mappings for Monument Diagnosys ...................................................... 347
Sarah Janvier-Badosa, Chiara Stefani, Xavier Brunetaud, Kevin Beck, Livio De Luca and Muzahim Al-Mukhtar

Onna Project: A Natural Interaction Installation and Mobile Solution for Cultural Heritage ...................... 359
Gianpaolo D’Amico, Alberto Del Bimbo, Andrea Ferracani, Lea Landucci and Daniele Pezzatini

Digital Storytelling for Cultural Heritage: A Modular, Multi-channel, Multi-scenario Approach .................. 367
Michela Negrini and Nicoletta Di Blas

Part V Development and Testing of Conservation Treatments

Consolidation of Carrara Marble by Hydroxyapatite and Behaviour After Thermal Ageing ..................... 379
Enrico Sassoni and Elisa Franzoni
Characterization of a Newly Synthesized Calcium Oxalate-Silica Nanocomposite and Evaluation of Its Consolidation Effect on Limestones .......................... 391
A. Verganelaki, N. Maravelaki, V. Kilikoglou, I. Karatasios, I. Arampatzis and K. Siamos

Ammonium Oxalate Treatment Application in the Presence of Soluble Salts: Laboratory Results on Soft Limestone ............ 403
Tabitha Dreyfuss and JoAnn Cassar

Calcium and Magnesium Alkoxides for Conservation Treatment of Stone and Wood in Built Heritage ......................... 413
Monica Favaro, Matteo Chiurato, Patrizia Tomasin, Franco Ossola, Naida El Habra, Nicola Brianese, Ingemar Svensson, Erwin Beckers, Vicente Javier Forrat Pérez, Maria Dolores Romero Sánchez and Adriana Bernardi

Transparent Hybrid Films for Stone Conservation and Protection . . . 423
G. Cappelletti, P. Fermo, A. Piazzalunga and G. Padeletti

Survey of Repaired and Artificial Stones of the Archaeological Site of Pella Five Years After Application ......................... 431
Ioanna Papayianni, Maria Stefanidou and Vasiliki Pachta