Table of Contents

	_		m	•4.	4 -	
•	a	m	m	ш	Гe	es

Preface

Invited and Keynote Papers

Earthquake Actions	
C. Modena, F. Da Porto, C. Filippo, M. Munari and E. Simonato	3
New Resolution for Historic Building Conservation by Building Moving Technology X.L. Lu, W.S. Lu and X. Zhang	19
Recent Results on Masonry Infill Walls K.J. Willam, C. Citto and P.B. Shing	27
Conservation of Heritage Structures in Turkey: Practice and Difficulties A. Turer	31
In Situ Assessment of Structural Timber: State-of-the-Art, Challenges and Future Directions B. Kasal	43
The Crack Pattern in Brunelleschi's Dome in Florence: Damage Evolution from Historical to Modern Monitoring System Analysis F. Ottoni, E. Coïsson and C. Blasi	53
The Conservation of Earthen Architectural Heritage in Seismic Areas J. Vargas Neumann	65
Seismic and Wind Performance of Five-Storied Pagoda of Timber Heritage Structure T. Hanazato, C. Minowa, Y. Niitsu, K. Nitto, N. Kawai, H. Maekawa and M. Morii	79
Archeological Excavations: The "Trauma" and other Consequences on Structural Conservation of Buildings and Sites Y. Schaffer	97
Material and Structural Configurations	
Brick as a Construction Material in the Modernization Process of the Ottoman Architecture A. Çiftçi and U. Yergün	107
Geotechnical Aspects of the N1 Tower, Prasat Sour Prat, Angkor Thom, Cambodia Y. Iwasaki, M. Fukuda, K. Nakagawa, Y. Akazawa, I. Shimoda and T. Nakagawa	113
Domination of Commercial Patents in the Evolution of Early Reinforced Concrete: Case-Study of the Region of Brussels A. Hellebois and B. Espion	119
From Simple Roof Structure Calculus Based on 2D Modelling to 3D Models—Case Study: Reformed Church in Cluj-N., Romania	119
D. Makay, B. Sándor, B. Bordás and Z. Blénesi	125
Steel Frame Construction Technology in Ottoman Architecture and "Metro Khan" U. Yergün and B. Çelebioğlu	131
Gothic Structural Theories Ca. 1930: The Contribution of Victor Sabouret I. Tarrío	137
	137 143
I. Tarrío The Suspension Iron Bridge of the Early 19 th Century Villa Borghese in Florence (Italy)	
I. Tarrío The Suspension Iron Bridge of the Early 19 th Century Villa Borghese in Florence (Italy) A. Cecchi, A. Passerini and D. Salvestrini A Case Study of the Korean Traditional Wood House-Mindori S.H. Park, S.J. Jung, D.M. Kim and S.K. Hong Becoming Unsafe Overnight: Managing Historic Buildings as Building Regulations and Standards Change	143 149
I. Tarrío The Suspension Iron Bridge of the Early 19 th Century Villa Borghese in Florence (Italy) A. Cecchi, A. Passerini and D. Salvestrini A Case Study of the Korean Traditional Wood House-Mindori S.H. Park, S.J. Jung, D.M. Kim and S.K. Hong Becoming Unsafe Overnight: Managing Historic Buildings as Building Regulations and	143

Hagios Gregorios Theologos Church in Cappadocia B. Çelebioğlu and S. Limoncu	169
Structural Restoration of Historical Constructions Built with Gypsum Pillars and Floors for New Standards of Living	
F. Vegas, C. Mileto, A. Alonso-Durá and A. Martínez	175
The Complexity and the Logic Behind Historical Buildings: The Case-Study of Palazzo del Podestà in Mantova, Italy M. Cofani, V. Frignani and A. Landi	181
The First Reinforced Concrete Structures in Urban Renewal in an Italian Provincial City M.P. Gatti and G. Cacciaguerra	187
Structural Inspection and Monitoring	
Elasticity of Calcium Silicate Brick Masonry Wall Due to Sulphate Attack I.M.H. Wan, B.H. Abu Bakar, M.A.M. Johari and P.J. Ramadhansyah	195
Influence of Sulphate on the Moisture Movement of Calcium Silicate Brick Masonry Wall I.M.H. Wan, B.H. Abu Bakar, M.A.M. Johari and P.J. Ramadhansyah	201
Repair and Health Monitoring for Historical Structures M.H. Maleki Tabrizi	205
Applicability of X-Ray Diffraction Technique for Stresses Quantification in Metallic Structural Elements	
S. Sánchez-Beitia and J. Barrallo Prodicting the Time to Failure in Heavily Loaded Mesonry Specimens with the Acquetic	211
Predicting the Time to Failure in Heavily Loaded Masonry Specimens with the Acoustic Emission Technique E. Verstrynge, L. Schueremans and D. Van Gemert	217
Minor Destructive Testing of XVIII Century Brick Wall Using Compact Diagnostic Test CoDiT	
M. Sklodowski	223
Tube-Jack Testing for Irregular Masonry Walls: First Studies L.F. Ramos and Z. Sharafi	229
Historic Buildings: Long Term Stability Evaluation Using Wireless Sensor Networks H.Y. Wu, D. Zonta, M. Pozzi, P. Zanon and M. Corrà	235
Competition between Hydration and Carbonation in Hydraulic Lime and Lime-Pozzolana Mortars	
Ö. Cizer, K. Van Balen and D. Van Gemert	241
Historical Analysis and Structural Monitoring Cases – Studies for an Integrated Approach L. Balboni, P. Corradini, D. Del Curto and L. Valisi	247
Real-Time Diagnosis of Historical Artworks by Laser-Induced Fluorescence L. Fiorani, L. Caneve, F. Colao, R. Fantoni, P. Ortiz, M.A. Gómez and M.A. Vázquez	253
Commercial Ready-Mixed Mortars for the Conservation of Cultural Heritage: Characterization and Preliminary Durability Test D. Gulotta, L. Toniolo, C. Tedeschi and L. Binda	259
Wrocław University's Leopoldinum Auditorium – Tests of Its Ceiling and a Conservation and Strengthening Concept	209
J. Jasieńko, T. Nowak and Ł. Bednarz	265
RILEM Technical Committee on <i>In Situ</i> Assessment of Structural Timber B. Kasal and T. Tannert	271
Dynamic Identification and Monitoring of St. Torcato Church L.F. Ramos, M. Alaboz and R. Aguilar	275
Structural Analysis and Assessment	
Analysing Buildings from Context to Detail in Time: The ABCD Research Method Case Study: Friesland Provincial Library in Leeuwarden	202
H. Zijlstra	283

Numerical Analysis of Tunnelling Effects on Masonry Buildings: The Influence of Tunnel Location on Damage Assessment	
G. Giardina, M.A.N. Hendriks and J.G. Rots	289
Numerical Assessment of the Ebe Schooner-Brig S. Invernizzi, C. Bertolini-Cestari and E. Chiabrera	295
Experimental and Numerical Analysis of a Two-Span Model Masonry Arch Bridge Subjected to Pier Scour	
A. Čarpinteri, A. de Stefano, S. Invernizzi, G. Ruocci, G. Lacidogna, A. Manuello, R. Ceravolo, L. Degiovanni and A. Quattrone	301
Experimental and Numerical Analysis of Behaviour of Old Brick Masonries N. Domede and A. Sellier	307
Masonry Walls as Orthotropic No Tension Structures M. Basili and A. Sinopoli	313
Pathology of the Katholikon of Hosios Loukas Monastery and Preliminary Structural	
Analysis A. Miltiadou-Fezans, E. Vintzileou and N. Delinikolas	319
The Stability of the Basilica of Maxentius in Rome	225
A. Albuerne Long-Term Reliability of Historical Monuments Built with Low Quality Sandstone	325
E. Verstrynge, L. Schueremans, D. Van Gemert and E. Bourel	331
Safety Evaluation of Timber Structures through Probabilistic Analysis H.S. Sousa, P.B. Lourenço and L.C. Neves	337
Analysis and Demolition of Some Vaults of the Church of La Peregrina in Sahagún (Spain) S. Huerta and P. Fuentes	343
The Role of Solid Springer in Masonry Vault V. Ceradini, M. Candela and R. Fonti	349
Analytical and Numerical Approach to the Romanian Medieval Church Structures B. Szabó, I.N. Kirizsá and L. Vass	355
Two-Step Pushover Analysis of an Ancient Masonry Oil-Mill in the Southern Italy G.A. Cundari, G. Milani, G. Failla, F. Nucera and A. Santini	361
Modeling the Static Behaviour of a Double Curvature Brickwork Vault A. Anzani, P. Condoleo, A. Gobbo and A. Taliercio	367
Victor Horta's Iron Architecture: A Structural Analysis Q. Collette, I. Wouters, M. De Bouw, L. Lauriks and A. Younes	373
Structural Changes Effect on Deflect of Tower St. Jiri on Prague Castle P. Fajman	379
Stability Analysis on the Roof Trusses of the Broumov Group of Churches to Underline Statical Sense of Dientzenhofers	
P. Kuklík, P. Duinker and J. Hettinga Prince of Wales Fort: Structural Wall Analysis	385
A. Isfeld and N. Shrive	391
Statistical Time Series Analysis of Crack Movements at Bayon Main Tower, Cambodia S. Yamada, M. Araya, M. Fukuda and Y. Iwasaki	397
Stability Analysis of Monument: A Case Study-Safdarjung Tomb A. Ahmad and K. Moin	403
Structural Effects of Brick Arrangement and Span Length on Mid-Pointed Arches M. Hejazi and F. Jafari	411
Flexural and Shear Strength of Granite Reinforced by Metal Rods S.G. Hong and W.Y. Lim	417
Experimental Study on the Injected Anchors Behaviour on Historical Masonry C. Algeri, E. Poverello, G. Plizzari and E. Giuriani	423
Kinematic Stability of Masonry Arches P. Smars	429
FE Modeling of a Historic Masonry Tower and Vibration-Based Systematic Model Tuning C. Gentile and A. Saisi	435
Analytical Modelling of Traditional Composite Timber-Masonry Walls I.N. Doudoumis	441

A Discrete Element for Modeling Masonry Vaults I. Caliò, F. Cannizzaro and M. Marletta	447
The Seismic Assessment of the Curia in the Roman Forum through Simplified Models S. Podestà and S. Parodi	453
Structural Analysis of the Paderno d'Adda Bridge (Italy, 1889) R. Ferrari, M. Facheris and E. Rizzi	459
Analytical and Numerical Analysis on the Collapse Mode of Circular Masonry Arches E. Rizzi, G. Cocchetti, G. Colasante and F. Rusconi	467
The Ancient Reinforced Beams as Model of Consolidation an Example in the Palazzo Pallavicino in Cremona (Italy) A. Grimoldi	473
Experimental and Numerical Analysis of Traditional Column Connections with the Possible Retrofit Concept D. Lazarević, J. Atalić, J. Krolo, M. Uroš and M. Šavor	479
Masonry Analysis Interpretation and Data Archive System E. Adorni and C. Blasi	485
Structural Analysis of the Bell Tower of the Basilica De La Merced of Lima H.E. Torres Peceros	491
Small-Scale Models for Testing Masonry Structures A. Quinonez, J. Zessin, A. Nutzel and J. Ochsendorf	497
Thrust Line Using Linear Elastic Finite Element Analysis for Masonry Structures M. Varma, R.S. Jangid and S. Ghosh	503
Structural Interpretation of "Armate Travi" in N-E Italy through the Historical Treatises S. Dandria, J. Badalini and D. Penazzi	509
Structural Behavior Analysis of Masonry Stone Pagoda Considering the Inner Construction Types of Stylobate Y.S. Park, J.Y. Kim, S.I. Hong, D.M. Kim, S.J. Jung and H.S. Kim	515
Preliminary Studies for the Recovering of the Armstrong, Mitchell & Co. Hydraulic Crane of the Arsenal of Venice G. Bettiol, M.R. Valluzzi, E. Garbin, C. Menichelli, A. Lionello and C. Modena	519
Structural Analysis of Historical Metal Bridges in Italy A. Pipinato, C. Pellegrino and C. Modena	525
Structural Analysis of the "3Ponti" of Comacchio (Ferrara, Italy) M. Pizzolato, M. Monti, P. Pigozzi and A. Tralli	531
Bending Test on Composite Timber-Steel-Concrete Floor Equipped with Innovative Collar Connectors	
A. Marzo, M.R. Grippa, B. Faggiano and F.M. Mazzolani Complex Covering Timber Structures in Monumental Buildings: A Study Case	537
M.R. Grippa, A. Marzo, B. Faggiano and F.M. Mazzolani Structural Assessment of the Vaulted Masonry Ice Storage Glacières Royales (1874) in	543
Brussels A. Hellebois, D. De Wolf and M. Provost	549
Preliminary Observations on the Structural Condition of a Byzantine Monument in Historic Peninsula of Istanbul: Pantokrator Church U. Almaç	555
Settlement Induced Damage Modelling of Historical Buildings: The Bell Tower of the "Basilica dei Frari" in Venice	
F. Lorenzoni, M.R. Valluzzi, C. Modena, E. Simonato, F. Casarin and A. Lionello	561
Seismic Analysis and Evaluation	
Investigation of the Rail-Induced Vibrations on a Masonry Historical Building A. Erkal, D. Laefer, P. Fanning, E. Durukal, U. Hancilar and Y. Kaya	569
Restoration and Strengthening of a Historical Structure in Antalya - Turkey A. Koçak and Z. Kilit	575
Seismic Assessment of Bell Towers of Mexican Colonial Churches F. Peña and M. Meza	585

Seismic Hazard and Nonlinear Dynamic Analyses: Avoiding Collapse in Architectural Heritage	
P. Pineda, A. Sáez and A.J. Martín	591
Strengthening Design of a Business Architecture Built During the Period of the Republic of China in Nanjing Q. Chun and Q. Zhou	597
Evaluation of Dynamic Characteristics of Masonry Arch Bridges: Linking Full-Scale Experiment and FEM Modeling J.M. Dulinska	605
Istanbul Grand Bazaar Evacuation System Vulnerability Assessment G. Yücel and G. Arun	611
Seismic Assessment of a Historical Tower with Advanced Numerical Model Tuned on Ambient Vibration Data A. D'Ambrisi, V. Mariani and M. Mezzi	617
Mechanical Analysis for the Assessment of the Seismic Capacity of Masonry Buildings' Classes in the City Centre of Sulmona (Italy) M. Munari, G. Busolo and M.R. Valluzzi	623
Testing and Seismic Capacity Evaluation of a Typical Traditional Ottoman Timber Frame E. Aktas, Y. Didem, A. Turer, B. Erdil, U. Akyüz and G.N. Sahin	629
Seismic Vulnerability Assessment of Ancient Masonry Building: An Experimental Method N. Mendes, P.B. Lourenço and A.C. Costa	635
Seismic Damage to Churches: Observations from the L'Aquila, Italy, Earthquake and Considerations on a Case-Study L. Binda, C. Chesi and M.A. Parisi	641
Shaking Table Tests on Multi-Leaf Stone Masonry Structures: Analysis of Stiffness Decay N. Mazzon, C.M. Chavez, M.R. Valluzzi, F. Casarin and C. Modena	647
Seismic Safety Assessment of the "Tekyeh Amir Chakhmagh" by Simplified Kinematic Limit Analysis S.R. Pashanejati and C. Molins	653
Dynamic Behavior of a Historical Building D. Rinaldis, P. Clemente and G. Buffarini	659
Damage Assessment of Historic Earthen Sites after the 2007 Earthquake in Peru N. Claudia and B. Cancino	665
On the Dynamic Behaviour of Strengthened Stone Masonry Walls A. Elmenshawi, M. Sorour, D. Duchesne, J. Paquette, A. Mufti, L. Jaeger and N. Shrive Seismic Assessment of the Superstructure of the Naghareh Khaneh Edifice after Base	671
Isolation by Simplified Kinematic Limit Analysis M. Golabchi, P. Homami and S.R. Pashanejati	677
Numerical Simulation of the Seismic Response of a Mexican Colonial Model Temple Tested in a Shaking Table C.M. Chavez and R. Meli	683
Sensitivity of the Seismic Response of Long Medieval Walls to Earthquake and Material Uncertainty	
A. Sextos, K.A. Stylianidis and K. Mykoniou Study on Relationship between Elastic Wave Profile and Stones' Condition in Angkor Monument	689
S. Tachino, S. Yamada, S. Sakurai, M. Araya and Y. Iwasaki Hysteretic Behavior of Korean Traditional Wooden Frames	697
S.G. Hong, N.K. Hong and S.Y. Lee Dynamic Assessment of the Iron Bridge at Paderno d'Adda (1889)	703
C. Gentile and A. Saisi Numerical Investigations on the Seismic Response of Masonry Building Aggregates I. Senaldi, G. Magenes and A. Penna	709 715
Seismic Assessment of Monastery of Stoudios (Imrahor Mosque) in Istanbul B. Kucukdogan, J. Kubin and A.I. Unay	721
The Intervention of Earthen Heritage in Seismic Areas and the Conservation Charters J. Vargas Neumann, M. Blondet and C. Iwaki	727

The Vulnerability Assessment of Historical Masonry Buildings Against Earthquakes by the Modified Equivalent Frame Method	
F. Alemi, P. Homami, M. Golabchi and M. Akbarian	735
Rehabilitation of Timber Structures and Seismic Vulnerability: A Case Study M.A. Parisi, M. Riggio, C. Tardini and M. Piazza	741
Non Linear Response of Masonry Wall Structures Subjected to Cyclic and Dynamic Loading	
F. Sima, P. Roca and C. Molins	747
Seismic Analysis for the Structural Retrofit of "Palazzo della Civiltà Italiana" in Rome EUR, Italy T. Trombetti, C. Ceccoli, G. Gasparini and S. Silvestri	753
Seismic Vulnerability of the Concordia Temple	133
S. Caddemi, I. Caliò, F. Cannizzaro, M. Marletta and B. Pantò	759
Seismic Vulnerability of Historical Structures: Damage State of the Abruzzo (Italy) Churches in the Sequence of the April 2009 Earthquake B. Silva, C.Q. Costa, F. Da Porto, M.R. Valluzzi and C. Modena	765
The Behaviour of S. Agostino Church during 6 th April 2009 Earthquake in L'Aquila: Vulnerability and Damage Assessment	771
C. Calderini and S. Lagomarsino Seismic Assessment by Numerical Analyses and Shaking Table Tests for Complex Masonry	771
Structures: The Hagia Irene Case Study G. Croci, A. Viskovic, A. Herzalla, M. Erdik, M. Akdoğan, G. de Canio and L. Antonelli	777
Investigation on Seismic Properties of Load-Bearing Masonry Walls in Chinese Historical	111
Buildings	702
B. Peng, W.D. Liu and W.B. Yang Seismic Vulnerability of the Dey's Palace (Algiers, Algeria)	783
A. Abdessemed-Foufa and H. Bendjedia	789
Shake Table Test on Rammed Earth Wall Panels R.R. Hu and Y.J. Dong	795
Seismic Behavior of some Basilica Churches after L'Aquila 2009 Earthquake G. Lucibello, G. Brandonisio, E. Mele and A. De Luca	801
On Overturning of the Façade in Churches with Single Nave: Some Case Studies from L'Aquila, Italy, 2009 Earthquake	
G. de Felice and A. Mauro	807
Strengthening Technologies	
Safety Risk Management in the Reformation of Bracket Girder and Cut Column for an Existing Industrial Single-Storey Building	01.5
T.S. Zhao, L.P. Ding, J.J. Tang, F.Q. Xu and D.B. Li Investigation of Earthquake Behavior of the Church of St. Sergius and Bacchus in	815
Istanbul/Turkey 1	001
A. Koçak and T. Köksal Evnevimental and Computational Validation of Dissinative Protestume for the Science	821
Experimental and Computational Validation of Dissipative Prototype for the Seismic Protection of Heritage Buildings S. Paganoni and D. D'Ayala	831
Efficiency of CFRP Strengthening of Arches Tested by Failure of Historical Building after the Inappropriate Repair Intervention K. Flaga and A. Kwiecień	837
Seismic Risk Mitigation of Historical Masonry Towers by Means of Prestressing Devices A.P. Quiroz, S.T. Sperbeck, H. Budelmann, G. Bartoli and E. Bazrafshan	843
Innovative Strengthening Solution Based on Textile Reinforced Mortar for Stone Masonry	0.13
Arches L. Garmendia, J.T. San-José, D. García, P. Larrinaga and J. Díez	849
Strengthening Layout Using FRP in Industrial Masonry Chimneys under Earthquake Load S.F.J. Pallaré, S. Ivorra, L. Pallarés and J. Adam	855
The Grange of S. Anna in Montauro: The Employment of a Particular Steel-Concrete Structure in a Borderline Case of Conservation and Restoration for High Seismic Area	
M. Candela and R. Fonti	861

Improving Hurricane Survivability of Heritage Structures P.S. Sparks	867
Structural Evaluation and Strengthening of Zeynelbey Tomb in Hasankeyf, Turkey A. Turer	873
Strengthening Proposals for the Trigonio Tower at the City Walls of Thessaloniki V. Delizisi, M. Axiotidou, I.N. Doudoumis and C. Ignatakis	879
The Research on the Rust of Reinforced Bar and the Strengthening Measures to the Existed R.C. Frame nearby the Sea J.J. Miao, B. Qi and Y.C. Liu	885
Stabilization and Strengthening the Foundation of the Two Entrance Gates of the Holy Shrine of Imam Reza (PBUH) P. Homami and M. Golabchi	891
Blasting near Old Foundations and Strengthening of Foundation Walls for the Headquarters of the Ministry for Foreign Affairs of Finland K. Avellan	897
Strengthening of Historical Masonry Buildings with Fiber Reinforced Polymers (FRP) A. Kheyroddin, M.H. Saghafi and S. Safakhah	903
Study on Effect of FRP Reinforced Manners on Seismic Performance of Concrete Frame Structure	
Y.P. Peng, M. Ma and M.X. Chen Bond between Concrete and Multi-Directional CFRP Laminates	911
J. Sena-Cruz, J. Barros and M.R.F. Coelho	917
Lightweight Ribs for the Strengthening of Single Leaf Vaults Undergoing Seismic Actions L. Ferrario, E. Marchina, A. Marini, M. Preti and E. Giuriani	923
Analysis of Strengthening Methods for Retained Exterior Walls during a Structural Retrofit	
Y. Ouyang and Y. Hu	929
Retrofitting and Strengthening Design for the Former Yihe Spinner Factory in Shanghai Y. Ouyang and Y. Yi	935
The Use of High-Strength Composites in the Reinforcement of Timber B. Kasal and A. Heiduschke	941
Design of the Seismic Upgrading of the Tambour of the S. Nicolò's Church in Catania with the DIS-CAM System	
M. Di Croce, F.C. Ponzo and M. Dolce	947
The S. Marco Church in L'Aquila: Provisional Interventions after the 2009 Abruzzo Earthquake M. Carraro, T. Ghedina, A. De Sabbata, C. Modena, F. Casarin and D.M. Benetta	953
Behaviors of Historic Masonry Walls Retrofitted with GFRP under Axial Load W. Raongjant, M. Jing and R. Kerdmongkon	959
Compressive Strengthening of Damaged Historic Masonry Walls Repaired with GFRP M. Jing, W. Raongjant and R. Kerdmongkon	965
Retrofitting and Moving Protection for Historical Buildings in Jinan City X. Zhang, S.B. Li and T. Liu	971
Mortar Replacement Reinforcement Method for Existing Masonry Structures L. Luo, M. Zhao and Y. Liu	977
Rehabilitation and Retrofitting	
On 4R Principle in the Rehabilitation of Concrete Historic Buildings J.Z. Xiao, W.G. Li and M.M. Tawana	985
Seismic Retrofitting of Historic Masonry Buildings – Case Study A.R. Santhakumar, M.S. Mathews, S. Thirumurugan and R. Uma	991
Strike a Balance - Repair or Replace? E.S.T. Leung, E.S. Yeung and S.W. Chan	997
Structural Restoration and Adaptation to Modern Architecture of the Baroque Oppersdorf	
Palace, Wrocław, Poland P. Berkowski, G. Dmochowski, M.Y. Minch and J. Szołomicki	1003

Revitalization of Historical Building in Wrocław's City Centre, Poland P. Berkowski, G. Dmochowski, M.Y. Minch and J. Szołomicki	1009
Preservation, Safeguard and Valorization of Masonry Decorations in the Architectural Historical Heritage of Piedmont (Italy)	1017
A. Carpinteri, S. Invernizzi, G. Lacidogna and A. Manuello	1015
Conservation and Preservation of Historical Earthen Structures A. Osman	1021
The Protection Problems and Reparations of Ahi Çelebi Mosque in Istanbul R. Özakin and A. Erdem	1027
The Restoration of a Wood-Frame House in Anatolia, the Yakup Ağa Mansion A. Erdem and R. Özakin	1033
Scientific Education and Research Centre of the National Institute for Cancer Rio de Janeiro, Brazil B.T. De Oliveira	1039
The Theory and Practice of Restoration in England in the Second Half of the 19 th Century: The Work of George E. Street F. López-Ulloa	1045
Interventions on the Gothic Roof Structure of the Nave at the Lutheran Church in Bistrița	10.0
(Romania) I. Kirizsán, B. Szabó and L. Vass	1051
Protecting the Tangible and Intangible Heritage of Rani ki Vav: A Unique Subterranean Step Well in Gujarat	
T.L. Priya Passayah Planning and Interpretions Coulds for Historic Pass Structures with Passayah	1057
Research, Planning and Interventions Guide for Historic Roof Structures with Baroque Character D. Makay and E. Olosz	1065
Assessment of the Compatibility of Repair Mortars in Restoration Projects Ö. Cizer, L. Schueremans, G. Serre, E. Janssens and K. Van Balen	1071
A New Technique and its Application in the Conservation of Historical Masonry Constructions - Underpinning by Manual Pipe-Jacking W.X. Zhang, P. Chen, D. Zhao and Y.Q. Zhang	1077
Structural Rehabilitation of Siad Hashim Historical Mosque in Gaza M.M. Ziara	1083
Restoration of the Chapel of Padre Faria in Ouro Preto, MG - Brazil M.R.O. De Marco and B.T. De Oliveira	1089
Retrofitting of Timber Beam Ceilings with the Timber-Concrete Composite Construction K. Holschemacher and H. Kieslich	1095
Comparison of <i>In Situ</i> and Laboratory Testing for the Characterization of Old Timber Beams before and after Intervention	
M. Piazza, M. Riggio, R. Tomasi and I. Giongo	1101
"Respecting the Diversity" - The Timber Roof of the "Cannons Loggia" in the Thun Castle (Italy)	
G.A. Massari, M. Riggio and F. Gadotti	1107
A Methodology for Approaching the Reconstruction of Historical Centres Heavily Damaged by 2009 L'Aquila Earthquake C.F. Carocci, S. Cattari, C. Circo, D. Indelicato and C. Tocci	1113
PERPETUATE Project: The Proposal of a Performance-Based Approach to Earthquake	1113
Protection of Cultural Heritage S. Lagomarsino, H. Modaressi, K. Pitilakis, V. Bosiljkov, C. Calderini, D. D'Ayala, D. Benouar	
and S. Cattari	1119
Recommendations for the Conservation of Earthen Architectural Heritage in Chile C.A. Montes and C.G. Giesen	1125
Timber Structure in the Mission Churches of Chiquitos (Bolivia): Origins, Evolution and Restoration	
V.R. Trujillo and E. Kühne	1131
Second World War Damages of the Architectural Heritage: St. Maria Del Popolo Agli Incurabili Church in Naples	4455
V. Russo, G.P. Lignola, E. Vassallo and A. Zinno	1137

Evaluation of Architectural Characteristics for Conservation Decisions of Değirmendağı, İzmir, Turkey	
Ç.D. Kaplan, F. Murtezaoğlu, Ö. Akbulut and B. İpekoğlu	1143
Structural Interventions for Conservation of the 15 th Century Tahtakale Bath, Tire, Turkey F. Murtezaoğlu, Ç.D. Kaplan and B. İpekoğlu	1149
Restoration of the Tsar-Bell Pedestal in the Moscow Kremlin A. Shilin, M. Zaitsev, A. Kirilenko and L. Fabijansky	1155
Repair and Rehabilitation Works in the Moscow State Conservatory A. Shilin, V. Gaponov, V. Nikitin and D. Kartuzov	1161
Permanent Plan of the Safeguards Sectors in Algeria (PPMVSS): The Case of Algiers Old	
Urban Nucleus A. Abdessemed-Foufa, A. Zekagh and H. Merouani	1165
Composite Constructions of Timber and High-Performance Concrete H. Kieslich and K. Holschemacher	1171
Sustainable Utilization of Historical Buildings in China	
Preliminary Study on Memorial Archways in Ancient Huizhou of China T. Chen and Z.N. Wei	1179
A Study on the Bond Strength between Rebar and Concrete after Electrochemical Realkalisation Treatment for Carbonated Concrete W.J. Qu, K. Wang and Y. Xiong	1185
Parametric Modeling of Typical Chinese Traditional Buildings on the Basis of 3DSMax Script	1103
W. Wang and B.Y. Xie	1191
Experimental Studies of Reinforced Concrete Column Capacity Affected by Core Drilling L. Zhu, Q.F. Xu, X.M. Li and C.M. Zhu	1195
The Effect of the Realkalisation on the Corroded Reinforcing Bar W.J. Qu, K. Wang and Y. Xiong	1201
Compressive Stress Strain Relationship of Wood Confined with Fiber Composite Sheets X.B. Song, H.Y. Tang, W.P. Zhang and X.L. Gu	1207
New Method for Surveying and Mapping Architectural Plane In-House with Laser Reticule Images	1010
X. Li, X.L. Gu, X.B. Song and J.N. Wang The Structural Analysis of the Historical Constructions of West Chine Company Sichner	1213
The Structural Analysis of the Historical Constructions of West China Campus-Sichuan University	
L.L. Luo, Z.T. Xie, T. Wu, Y.W. Wang, C.B. Xiao and C.J. Ling	1219
Progressive Collapse Evaluation for Historic Building Structures F. Lin, Y. Wang, X.L. Gu and X.Y. Zhao	1225
Experimental Research on Seismic Behavior of Non-Rigid Steel Beam-Column Connections	
with Concrete Cover L.X. Jiang, F. Zhou and Q.W. Zheng	1233
Lime-Based Materials and Practices for Surface Refitting of Cultural Heritage S.B. Dai, J.H. Wang, Y. Hu and D.B. Zhang	1241
Behavior of Circular Concrete Columns Repaired with Steel Bars and Wire Mesh-Mortar F.F. Li, X.Y. Wu, Y. Zhou, X.H. Lu and G.J. Xiong	1247
Remediation of Historic Buildings and Patrimony by Bacterially Induced Mineralization P.H. Li and W.J. Qu	1253
Performance-Based Seismic Evaluation of Historical Buildings W. Cui, W.P. Zhang and X.L. Gu	1259
System Based Seismic Strengthening Design Analysis for a Historic Building L. Wang, Y.P. Peng, X.L. Gu, W. Cui and W.P. Zhang	1265
Development and Application of Reliability Assessment Software for Historic Masonry	
Structures X.L. Gu, D.J. Sun, K. Sun and G.H. Hu	1271