

# **4th International Conference on Building Resilience, Incorporating the 3rd Annual Conference of the ANDROID Disaster Resilience Network 2014**

**Procedia Economics and Finance Volume 18**

**Salford Quays, United Kingdom  
8-11 September 2014**

**Editors:**

**Dilanthi Amaratunga  
Richard Haigh**

**ISBN: 978-1-63439-952-4  
ISSN: 2212-5671**

**Printed from e-media with permission by:**

Curran Associates, Inc.  
57 Morehouse Lane  
Red Hook, NY 12571



**Some format issues inherent in the e-media version may also appear in this print version.**

Copyright© by Elsevier B.V.  
All rights reserved.

Printed by Curran Associates, Inc. (2015)

For permission requests, please contact Elsevier B.V.  
at the address below.

Elsevier B.V.  
Radarweg 29  
Amsterdam 1043 NX  
The Netherlands

Phone: +31 20 485 3911  
Fax: +31 20 485 2457

<http://www.elsevierpublishingsolutions.com/contact.asp>

**Additional copies of this publication are available from:**

Curran Associates, Inc.  
57 Morehouse Lane  
Red Hook, NY 12571 USA  
Phone: 845-758-0400  
Fax: 845-758-2634  
Email: [curran@proceedings.com](mailto:curran@proceedings.com)  
Web: [www.proceedings.com](http://www.proceedings.com)

## TABLE OF CONTENTS

<b>Editorial.....</b>	1
<i>Richard Haigh, Dilanthi Amaratunga</i>	
<b>Applications of a “Whole Community” Framework for Enhancing Community or Campus Resilience .....</b>	<b>9</b>
<i>M. John Plodinec, Warren C. Edwards, Robin K. White</i>	
<b>Intelligent Green Buildings Project Scope Definition Using Project Definition Rating Index (PDRI).....</b>	<b>17</b>
<i>Chu Tih-Ju, Chang An-Pi, Hwang Chao-Lung, Lin Jyh-Dong</i>	
<b>Towards Integrated Security and Resilience Framework: A Tool for Decision-makers .....</b>	<b>25</b>
<i>Ksenia Chmutina, Lee Bosher, Jon Coaffee, Rob Rowlands</i>	
<b>Quantifying, Comparing Human Mobility Perturbation during Hurricane Sandy, Typhoon Wipha, Typhoon Haiyan .....</b>	<b>33</b>
<i>Qi Wang, John E. Taylor</i>	
<b>‘Coastal Resilience: New Perspectives of Spatial and Productive Development for the Chilean caletas Exposed to Tsunami Risk’ .....</b>	<b>39</b>
<i>Diego Marcucci</i>	
<b>Client’s Role in Building Disaster Management through Building Information Modelling.....</b>	<b>47</b>
<i>Ammar Dakhil, Mustafa Alshawi</i>	
<b>Natural Hazards in Ontario, Canada: An Analysis for Resilience Building.....</b>	<b>55</b>
<i>N. Nirupama, Indra Adhikari, Ali Sheybani</i>	
<b>Can the Observance of Human Rights of Individuals Enhance Their Resilience to Cope with Natural Disasters?.....</b>	<b>62</b>
<i>Karen Da Costa</i>	
<b>Seismic Risk at the Urban Scale: Assessment, Mapping and Planning .....</b>	<b>71</b>
<i>Romeu Vicente, Tiago Ferreira, Rui Maio</i>	
<b>Flood Mitigation Measures in the United Kingdom.....</b>	<b>81</b>
<i>I. Nquot, U. Kulatunga</i>	
<b>A Study on Community’s Perception on Disaster Resilience Concept .....</b>	<b>88</b>
<i>Edith Shiromini Ranjan, C. Chethika Abenayake</i>	
<b>Development of an Index to Measure Stakeholder Approaches toward Disasters in the Built Environment .....</b>	<b>95</b>
<i>S. Mohammad H. Mojtabedi, Bee-Lan Oo</i>	
<b>Mapping Construction Industry Roles to the Disaster Management Cycle.....</b>	<b>103</b>
<i>Emlyn Witt, Kapil Sharma, Irene Lill</i>	
<b>Socio-economic Complexities of Flood Memory in Building Resilience: An Overview of Research.....</b>	<b>111</b>
<i>Namrata Bhattacharya-Mis, Jessica Lamond</i>	
<b>Project Management Success for Post-disaster Reconstruction Projects: International NGOs Perspectives.....</b>	<b>120</b>
<i>Dzulkarnaen Ismail, Taksiah A. Majid, Ruhizal Roosli, Noorazam Ab Samah</i>	
<b>Rio de Janeiro Community Protection Program .....</b>	<b>128</b>
<i>Marcio Motta, Marcelo Abelheira, Orlando Gomes, Walter Fonseca, Daphne Besen</i>	
<b>Effectiveness of Dissemination and Communication Element of Tsunami Early Warning System in Aceh .....</b>	<b>136</b>
<i>Rina Suryani Oktari, Khairul Munadi, M. Ridha</i>	
<b>Economic Feasibility Analysis of Pre-earthquake Strengthening of Buildings in a Moderate Seismicity / High Vulnerability Area .....</b>	<b>143</b>
<i>Hsi-Hsien Wei, Igal M. Shohet, Miroslaw J. Skibniewski, Robert Levy, Stav Shapira, Limor Aharonson-Daniel, Tsafir Levi, Amos Salomon, Ohad Levi</i>	
<b>Multicultural Approaches to Disaster and Cultural Resilience. How to Consider them to Improve Disaster Management and Prevention: The Italian case of two Earthquakes .....</b>	<b>151</b>
<i>Barbara Lucini</i>	
<b>Heavy Rains at Rio de Janeiro: Risk Monitoring .....</b>	<b>157</b>
<i>Marcio Motta, Marcelo Abelheira, Orlando Gomes, Walter Fonseca, Daphne Besen</i>	
<b>Building Participation to Reduce Vulnerability: How Can Local Educational Strategies Promote Global Resilience? A Case Study in Funchal – Madeira Island .....</b>	<b>165</b>
<i>Sara Bonati, Martinho P. Mendes</i>	
<b>A Macroseismic Method for Vulnerability Assessment of Rationalist Architectural Heritage.....</b>	<b>173</b>
<i>Podestà Stefano, Romano Chiara</i>	

<b>The Role of Urban Built Heritage in Qualify and Quantify Resilience. Specific Issues in Mediterranean City .....</b>	181
<i>A. D. Amico, E. Currà</i>	
<b>What about Us? Reported Experiences of Disabled People Related to the Christchurch Earthquakes .....</b>	190
<i>Suzanne Phibbs, Gretchen Good, Christina Severinsen, Esther Woodbury, Kerry Williamson</i>	
<b>Road Asset Management: The role of location in mitigating extreme flood maintenance .....</b>	198
<i>Russell Kenley, Toby Harfield, Juliana Bedgood</i>	
<b>A Framework for Risk Assessment .....</b>	206
<i>Satya-Lekh Proag, Virendra Proag</i>	
<b>From Vulnerability to Resilience: an Exploration of Gender Performance Art and how it has Enabled Young women's Empowerment in Post-hurricane new Orleans .....</b>	214
<i>Lisa Rose-Anne Overton</i>	
<b>Assessing and Measuring Resilience .....</b>	222
<i>Virendra Proag</i>	
<b>Capacity Building through Design Innovation with Vegetable Fibres for Temporary Shelters .....</b>	230
<i>Lara Leite Barbosa</i>	
<b>To what Extent is Electricity Central to Resilience and Disaster Management of the Built Environment? .....</b>	238
<i>Moshe Chain Kinn, Carl Abbott</i>	
<b>Adobe Construction Modeling by Discrete Element Method: First Methodological Steps .....</b>	247
<i>Dominique Daudon, Yannick Sieffert, Osvaldo Albarracín, Lucas Garino Libardi, Gustavo Navarta</i>	
<b>Methods for Integrative Research on Community Resilience to Multiple Hazards, with Examples from Italy and England .....</b>	255
<i>Richard Taylor, John Forrester, Lydia Pedoth, Nilufar Matin</i>	
<b>Seismic Risk of Inter-urban Transportation Networks .....</b>	263
<i>A. Kappos, A. Sextos, S. Stefanidou, G. Mylonakis, M. Pitsiava, G. Sergiadis</i>	
<b>Awareness, Perception and Communication of Earthquake Risk in Portugal: Public Survey .....</b>	271
<i>Romeu Vicente, Tiago Miguel Ferreira, Rui Maio, Herbert Koch</i>	
<b>Defining Resilience from Practice: Case Study of Resilience Building in a Multi-cultural College.....</b>	279
<i>Lipaz Shamoa-Nir</i>	
<b>Impact of Tablet Based Training in Empowering Remote Rural Community of South West Bangladesh to Acquire Disaster Preparedness Skills.....</b>	287
<i>Syed Ali Tarek</i>	
<b>Area Business Continuity Management, a New Opportunity for Building Economic Resilience .....</b>	296
<i>Hitoshi Baba, Taisuke Watanabe, Masafumi Nagaishi, Hideaki Matsumoto</i>	
<b>Asset-Management Framework(s) For Infrastructure Facilities in Adverse (post-conflict/disaster-zone/high-alert) Conditions.....</b>	304
<i>Kayis M. A. Abuzayan, Andrew Whyte, Joyce Bell</i>	
<b>Out of Harm's Way; Preventive Resettlement of at Risk Informal Settlers in Highly Disaster Prone Areas .....</b>	312
<i>Paula Claudio</i>	
<b>Flood Risk Mapping for the City of Toronto.....</b>	320
<i>Costas Armenakis, N. Nirupama</i>	
<b>Tackling Women's Vulnerabilities through Integrating a Gender Perspective into Disaster Risk Reduction in the Built Environment .....</b>	327
<i>Kanchana Ginige, Dilanthi Amaratunga, Richard Haigh</i>	
<b>A Local Level Technology and Policy Intervention Approach to Restore Paddy Ecosystems in the Nilwala Downstream, Affected due to Nilwala Flood Protection Scheme, Southern Sri Lanka .....</b>	336
<i>K. D. N. Weerasinghe, Senaka Basnayake, N. M. S. I. Arambepola, Udaya Rathnayake, Champa Nawaratne</i>	
<b>Community Resilience: Is it Greater than the Sum of the Parts of Individual Resilience? .....</b>	345
<i>Peter Eachus</i>	
<b>Transportation Evacuation Strategies Based on VANET Disaster Management System .....</b>	352
<i>Zubaida Alazawi, Omar Alani, Mohammad B. Abdjabbar, Rashid Mehmood</i>	
<b>The Cost Benefit Analysis of Providing Resilience .....</b>	361
<i>Satya-Lekh Proag, Virendra Proag</i>	
<b>The Concept of Vulnerability and Resilience .....</b>	369
<i>Virendra Proag</i>	
<b>Recommender Thermometer for Measuring the Preparedness for Flood Resilience Management .....</b>	377
<i>Arturas Kaklauskas, Natalija Lepkova, Dilanthi Amaratunga, Irene Lill, Vita Urbonaviciene, Jurga Naimaviciene, Loreta Budryte, Laura Tupenaite, Loreta Kanapeckiene</i>	
<b>Are we Listening, are we Learning?.....</b>	385
<i>Linda Kestle, Regan Potangaroa</i>	

<b>Exploring Family Resilience in a Community Mental Health Setup in South India.....</b>	391
<i>Hena Faqurudheen, Sini Mathew, T. Manoj Kumar</i>	
<b>One Message, Many Voices: Inter-Disciplinary Partnerships for Resilience Communication .....</b>	400
<i>H. Katherine O'Neill, Ellie M. McCann, Andrew J. McLean, Jacqueline J. Crawford, Mark S. Ellingson, Jenna Engquist, Sara Croymans</i>	
<b>Peru Sustainable (Resilient) Cities Programme 1998-2012. Its Application 2014 - 2021.....</b>	408
<i>Julio Kuroiwa</i>	
<b>Resilience and Environmental Justice: Potential Linkages.....</b>	416
<i>Vicente Sandoval, Claudia Gonzalez-Muzzio, Cristian Albornoz</i>	
<b>Framing Resilience. From a Model-based Approach to a Management Process .....</b>	425
<i>Hanneke Duijnhoven, Martijn Neef</i>	
<b>Transformability as a Factor of Sustainability in Post-earthquake Houses in Iran: The Case Study of Lar City .....</b>	431
<i>Mohammad Parva, Farzad Pour Rahimian</i>	
<b>The Sampaguita Livelihood System in Sta. Cruz, Laguna, Philippines: A Case of a Transformative Resilience Development.....</b>	439
<i>Susan T. Bacud, Virginia R. Cardenas, Luis Rey I. Velasco</i>	
<b>Exploiting Social Capital and Path-dependent Resources for Organisational Resilience: Preliminary Findings from a Study on Flooding.....</b>	447
<i>Martina McGuinness, Noel Johnson</i>	
<b>Potential Impact of Climate Change on Municipal Buildings in South Africa.....</b>	456
<i>Paul Chinowsky, Amy Schweikert, Carolyn Hayles</i>	
<b>The ANDROID Case Study; Venice and its Territory: Identification of Hazards and Impact of Multi-hazard Scenarios.....</b>	465
<i>Snjezana Knezic, Mickael Scudeller, Maurizio Indirli, Francesco Romagnoli, Tatjana Kuznecova, Skevi Perdikou</i>	
<b>Disaster Risk Reduction and Climate Change Adaptation Policy in Australia.....</b>	473
<i>Giuseppe Forino, Jason Von Meding, Graham Brewer, Thayaparan Gajendran</i>	
<b>The Role of Buildings in Disaster Risk Reduction: Focusing on the Great East Japan Earthquake.....</b>	483
<i>Dinil Pushpal, Koichi Ogata</i>	
<b>Building Community Resilience: Conceptual Framework and its Application in Post Tsunami Resettlement.....</b>	489
<i>Oscar Radyan Danar, Dinil Pushpalal</i>	
<b>The Current Approach of Urban Design, its Implications for Sustainable Urban Development .....</b>	497
<i>Nuwan Dias, Steve Curwell, Erik Bichard</i>	
<b>Stakeholder Engagement: A Green Business Model Indicator .....</b>	505
<i>Amal Abuzeinab, Mohammed Arif</i>	
<b>Resilientscapes: Perception and Resilience to Reduce Vulnerability in the Island of Madeira.....</b>	513
<i>Sara Bonati</i>	
<b>Mixed Messages: Tacit Communication Emanating from Non-human Actants in Disaster Contexts .....</b>	521
<i>Graham Brewer, Helen Giggins, Jason Von Meding, Jamie Mackee, Thayaparan Gajendran</i>	
<b>Building Resilience Through Territorial Planning: The Experience of Province of Potenza.....</b>	528
<i>Alessandro Attolico</i>	
<b>Adaptation of Rural Communities and Understanding their Socio-economic Vulnerability for Future .....</b>	536
<i>Didem Gunes Yilmaz</i>	
<b>Seismic Risk and Urbanization: The Notion of Prevention. Case of the City of Algiers.....</b>	544
<i>Khadidia Boughazi, Samia Rebouh, Messaoud Aiche, Naim Harkat</i>	
<b>Air Shelter House Technology and its Application to Shelter Units: the Case of Scaffold House and Cardboard Shelter Installations .....</b>	552
<i>Marco Imperadori, Graziano Salvalai, Cristina Pusceddu</i>	
<b>Multi Hazard Scenarios in the Mendoza/San Juan Provinces, Cuyo Region Argentina .....</b>	560
<i>Dominique Daudon, Stella Maris Moreiras, Elise Beck</i>	
<b>The Current Landscape of Disaster Resilience Education in Europe .....</b>	568
<i>Skevi Perdikou, Jiri Horak, Roshani Palliyaguru, Lena Halounová, Andrew Lees, Boyko Rangelov, Marco Lombardi</i>	
<b>The Implication of Hyogo Framework for Action for Disaster Resilience Education .....</b>	576
<i>Lei Zhou, Srinath Perera, Janaka Jayawickrama, Onaopepo Adeniyi</i>	
<b>Tsunami Disaster Recovery Experience: A Case Study on Micro, Small and Medium Scale Enterprises in Southern Sri Lanka .....</b>	584
<i>S. W. S. B. Dasanayaka, Gayan Wedawatta</i>	
<b>Towards Nearly Zero-energy Buildings through Analyzing Reasons for Degradation of Facades .....</b>	592
<i>Virgo Sulakatko, Irene Lill, Erki Soekov, Riina Arhipova, Emlyn Witt, Eneli Liisma</i>	

<b>Interdisciplinary Approach to Disaster Resilience Education and Research .....</b>	601
<i>M. H. Faber, L. Giuliani, A. Revez, S. Jayasena, J. Sparf, J. M. Mendez</i>	
<b>Text Analytics for Android Project.....</b>	610
<i>Arturas Kaklauskas, Mark Seniut, Dilanthi Amarasingha, Irene Lill, Andrej Safonov, Nikolai Vatin, Justas Cerkauskas, Ieva Jackute, Agne Kuzminske, Lina Peciure</i>	
<b>Using Shipping Containers to Provide Temporary Housing in Post-disaster Recovery: Social Case Studies.....</b>	618
<i>Guomin Zhang, Sujeewa Setunge, Stefanie Van Elmpt</i>	
<b>Role of Insurance in Post Disaster Recovery Planning in Business Community .....</b>	626
<i>Harshani Kaushalya, Gayani Karunasena, Dilanthi Amarasingha</i>	
<b>Making the Construction Industry Resilient to Extreme Weather: Lessons from Construction in Hot Weather Conditions.....</b>	635
<i>Mohammed N. Alshebani, Gayan Wedawatta</i>	
<b>Inclusive Design of Content &amp; Interface for Tablet Based Disaster Preparedness Training .....</b>	643
<i>Syed Ali Tarek</i>	
<b>Disaster Management Education through Higher Education – Industry Collaboration in the Built Environment .....</b>	651
<i>Menaha Thayaparan, Chamindi Malalgoda, Kaushal Keraminiyage, Dilanthi Amarasingha</i>	
<b>Aspects of Earthquake Risk Management in Slovenia .....</b>	659
<i>Marjana Lutman, Barbara Šket Motnikar, Polona Weiss, Iztok Klemenc, Polona Zupancic, Matej Cerk, Julij Jeraj, Primož Banovec</i>	
<b>Multiple Interpretations of Resilience in Disaster Risk Management .....</b>	667
<i>Kristen Macaskill, Peter Guthrie</i>	
<b>Flash Flood Assessment for Wadi Mousa City-Jordan .....</b>	675
<i>H. Alhasanat</i>	
<b>Planning Needs Assessment for Responding to Large Disaster Events in Cities: Case Study from Dhaka, Bangladesh .....</b>	684
<i>N. M. S. I. Arambepola, Md. Anisur Rahman, Khondoker Tawhid</i>	
<b>Developing a Holistic Risk Management Plan in Mitigating Flooding Risks for Buildings Adjacent to the Swan River in Perth, Western Australia .....</b>	693
<i>Clare Allender, Monty Sutrisna</i>	
<b>Vulnerability of the Emirati Energy Sector for Disaster: A Critical Review .....</b>	701
<i>Khalifa Al Kaili, Chaminda Pathirage, Dilanthi Amarasingha</i>	
<b>Applicability of Risk Transfer Tools to Manage Loss and Damage from Slow-onset Climatic Risks .....</b>	710
<i>Balogun Kehinde</i>	
<b>The Impact of the Local Political and Socio-Economic Condition to the Capacity of the Local Governments in the Maintenance of Post-Disaster Road Infrastructure Reconstruction Assets.....</b>	718
<i>Ezri Hayat, Dilanthi Amarasingha</i>	
<b>Assessing the Potential Impact of Heat Waves in Cities: Implications for Hazard Preparation and Planning.....</b>	727
<i>George Blumberg</i>	
<b>Challenges in Creating a Disaster Resilient Built Environment .....</b>	736
<i>Chamindi Malalgoda, Dilanthi Amarasingha, Richard Haigh</i>	
<b>Factors in building resilience in urban slums of Dhaka, Bangladesh.....</b>	745
<i>Iftekhar Ahmed</i>	
<b>Shakes, Rattles and Roll Outs: The Untold Story of Maori Engagement with Community Recovery, Social Resilience and Urban Sustainability in Christchurch, New Zealand .....</b>	754
<i>Christine Kenney, Suzanne Phibbs</i>	
<b>Assessing Gender Vulnerability within Post-earthquake Reconstruction: Case Study from Indonesia .....</b>	763
<i>Tri Yumarni, Dilanthi Amarasingha, Richard Haigh</i>	
<b>High Impact/Low Frequency Extreme Events: Enabling Reflection and Resilience in a Hyper-connected World .....</b>	772
<i>Anthony J. Masys, Nibedita Ray-Bennett, Hideyuki Shiroshita, Peter Jackson</i>	
<b>Energy Metabolism for Resilient Urban Environment: A Methodological Approach .....</b>	780
<i>Tatjana Kuznecova, Francesco Romagnoli, Claudio Rochas</i>	
<b>Achieving Disaster Resilience through the Sri Lankan Early Warning System: Good practises of Disaster Risk Reduction and Management.....</b>	789
<i>S. S. L. Hettiarachchi, S. Weeresinghe</i>	
<b>An Investigation into Societal Challenges of Sri Lanka with a Focus on National Planning and Coordination .....</b>	795
<i>S. S. L. Hettiarachchi, H. Goonasekera, S. Gunathilake, S. Weeresinghe</i>	

<b>The Influence of Social Factors towards Resurgent Malaria and its Mitigation Using Sri Lanka as a Case-study .....</b>	802
<i>S. Weeresinghe</i>	
<b>Public-private Partnerships (PPP) in Disaster Management in Developing Countries: A Conceptual Framework.....</b>	807
<i>Zairol A. Auzzir, Richard P. Haigh, Dilanthi Amaratunga</i>	
<b>The ANDROID Case Study; Venice and its Territory: Existing Mitigation Options and Challenges for the Future.....</b>	815
<i>Yamuna Kaluarachchi, Maurizio Indirli, Boyko Rangelov, Francesco Romagnoli</i>	
<b>The ANDROID Case Study; Venice and its Territory: Vulnerability and Resilience in Multi-hazard Scenarios.....</b>	825
<i>Ruben Paul Borg, Maurizio Indirli, Francesco Romagnoli, Claudio Rochas, Tatjana Kuznecova</i>	
<b>The ANDROID Case Utudy; Venice and its Territory: A General Overview .....</b>	837
<i>Maurizio Indirli, Snejzana Knezic, Ruben P. Borg, Yamuna Kaluarachchi, Boyko Rangelov, Francesco Romagnoli, Claudio Rochas</i>	
<b>Exploring the Links between Displacement, Vulnerability, Resilience .....</b>	849
<i>Gian Maria Pinto, Joseph Attwood, Nina Birkeland, Heidi Solheim Nordbeck</i>	
<b>ANDROID: An Inter-disciplinary Academic Network that Promotes Co-operation and Innovation among European Higher Education to Increase Society's Resilience to Disasters.....</b>	857
<i>Richard Haigh, Dilanthi Amaratunga, Menaha Thayaparan</i>	
<b>Post Tsunami Rehabilitation in the Context of National Initiatives Case Study-port City of Galle Sri Lanka.....</b>	865
<i>Samantha Hettiarachchi, Kushani De Silva</i>	
<b>Gender in the context of Disaster Risk Reduction; A Case Study of a Flood Risk Reduction Project in the Gampaha District in Sri Lanka .....</b>	873
<i>Kushani De Silva, Ramanie Jayathilaka</i>	
<b>Decision making on transport network planning and the impact on community, economy and the environment .....</b>	882
<i>Jayantha Withanaarachchi, Sujeeva Setunge</i>	
<b>How Sustainable are the Philippines-based Housing Donor Programs? A Multi-disciplinary Perspective.....</b>	892
<i>Sylvester Shaun David Seño</i>	
<b>Evaluation of the System of Disaster Management Resulting from War Operations and Terrorism in Iraq .....</b>	900
<i>Hajer Al-Dahash, Udayangani Kulatunga, Dilanthi Amaratunga</i>	
<b>Biometric Advisory System to Analyze a User's Post-Disaster Stress Management .....</b>	908
<i>Arturas Kaklauskas, Andrej Safonov, Algirdas Juozapaitis, Rasa Paliskiene, Vita Povilaityte, Silvija Rimkuviene, Lina Peciure, Gabrielius Kaklauskas, Lina Bartkiene</i>	
<b>The Analysis of Tsunami Vertical Shelter in Padang City .....</b>	916
<i>Faisal Ashar, Dilanthi Amaratunga, Richard Haigh</i>	
<b>An Overview of the Design of Disaster Relief Shelters .....</b>	924
<i>Abdulrahman Bashawri, Stephen Garrity, Krisen Moodley</i>	
<b>From Local Building Practices to Vulnerability Reduction: Building Resilience through Existing Resources, Knowledge and Know-how .....</b>	932
<i>Olivier Moles, Annalisa Caimi, Mohammad Shariful Islam, Tahsin Reza Hossain, Ratan Kumar Podder</i>	
<b>Assessment of Flood with Regards to Land Cover Changes .....</b>	940
<i>Lena Halounova, Vladimir Holubec</i>	
<b>Measuring Resilience on Communalities Involved in Flooding Ombrone River .....</b>	948
<i>Antonino Scarelli, Mirko Benanchi</i>	
<b>Analysis of Economic Resiliency of Communities Affected by Natural Disasters: The Bay Area Case Study .....</b>	959
<i>Davide Martinelli, Gian Paolo Cimellaro, Vesna Terzic, Stephen Mahin</i>	
<b>Utilizing Base-isolation Systems to Increase Earthquake Resiliency of Healthcare and School Buildings.....</b>	969
<i>Sarah Moretti, Alba Trozzo, Vesna Terzic, Gian Paolo Cimellaro, Stephen Mahin</i>	
<b>Author Index</b>	