

10th World Conference on Timber Engineering 2008

**Miyazaki, Japan
2-5 June 2008**

Volume 1 of 4

ISBN: 978-1-61567-088-8

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© (2008) by the Engineered Wood Products Association
All rights reserved.

Printed by Curran Associates, Inc. (2009)

For permission requests, please contact the Engineered Wood Products Association
at the address below.

Engineered Wood Products Association
6300 Enterprise Lane
Madison, WI 53719

Phone: (608) 310-6726
Fax: (608) 271-7006

info@ewpa.com

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
Web: www.proceedings.com

TABLE OF CONTENTS

VOLUME 1

Factors Influencing the Choice of Tree Species In Wooden Surfaces: An Architectural Survey	1
<i>Harri Metsälä</i>	
Evidence-Based Design of Timber Facades	7
<i>Ivor Davies</i>	
Improving the Competitiveness of Wood Products with a Credible Substance Brand	14
<i>Annika Mauno, Matti Kairi</i>	
Progress of Timber Multi-Storey Apartment Building in Europe and Japan	21
<i>Tzofit Shmuely-Kagami, Shuichi Matsumura</i>	
High Performance Timber for High Span Innovative Structures	29
<i>Jean-Luc Sandoz, Yann Benoit</i>	
Use of Wood Structures in the New Headquarters of the National Center of Researches for the Conservation of Natural Predators – CENAP/IBAMA - Brazil	39
<i>Roberto Lecomte De Mello, Julio Eustaquio De Melo</i>	
A Pilot Architecture Project for Sustainable Development in Taiwan - An Engineered Wood Building for the BEST Center	44
<i>Chi-Jen Chen</i>	
Simplified Design Equations for the Load-Carrying Capacity of Dowel-type Connections	51
<i>Marco Ballerini</i>	
Hardwood Architecture	59
<i>Harri Metsälä</i>	
Shaking Table Tests of Two-Story Passively-Controlled Wood Frames with Inner and Outer Walls	65
<i>Kazuhiro Matsuda, Hiroyasu Sakata, Kazuhiko Kasai, Yoji Ooki</i>	
A Geography of Eastern Log Building Based on Tree Species Use	72
<i>James S. Peters</i>	
Eco-Wood: The Ecological Benefits of Building with Wood	80
<i>Tullio Inglese</i>	
LVL Portal Frame Structures in New Zealand	88
<i>Cameron Rodger, Warwick Banks</i>	
An Application of Panel Web Beams for Long-span Timber Construction	96
<i>James Jianzhong, C. C. Yao, Frank Lam, Peter Suter</i>	
On the Application of Cohesive Zone Modeling in Timber Composite Structures	102
<i>Kay-Uwe Schober, Karl Rautenstrauch</i>	
Using Semi-Empirical Models to Design Timber Platform Frame for Stability	110
<i>Robert Hairstans, Abdy Kermani</i>	
Contribution to the Improvement of Design Conditions for Glulam Beams	117
<i>Lilita Ozola</i>	
Inclined Glue Laminated Timber Beams with an End Notch at the Tension Side	124
<i>Andi Asiz, Ian Smith</i>	

Fracture Behaviour and Design of Glulam Beams with Round Holes	132
<i>Simon Aicher, Lillian Höfflin</i>	
Some Aspects of Frictional Resistance in Timber Construction	140
<i>Takuro Hirai, Qingjun Meng, Kei Sawata, Akio Koizumi, Yoshihisa Sasaki, Takayoshi Uematsu</i>	
Mitigation of Flood Damage Through Raised Wood Floor Construction	148
<i>Catherine Marx Kaake, Vijaya Gopu</i>	
Design of Cross Laminated Timber (CLT)	156
<i>Peter Mestek, Heinrich Kreuzinger, Stefan Winter</i>	
Thermal Performance of Light-weight Timber Testbuildings	164
<i>Mark Dewsbury, Gregory Nolan, Roger Fay</i>	
Engineered Durability; Completion of a 10-Year Project	172
<i>Robert Leicester, Chi-Hsiang Wang, Minh Nguyen, Greg Foliente, Laurie Cookson, Ivan Cole, Colin Mackenzie</i>	
Impact Sound Insulation Properties of Light Timber Framed Floor Systems	180
<i>Joo-Saeng Park, Moon-Jae Park, Kwang-Mo Kim, Kweon-Hwan Hwang, Jin-Woo Nam</i>	
Improved Sound Insulated Floors for a 6 Storey Timber Building System	186
<i>John Chapman, George Dodd</i>	
Experimental Study of Sound Insulation Performance in the Wood-Framed Building	194
<i>Atsuo Hiramitsu, Hirotsugu Houno, Yukio Tsujimura</i>	
Quality Management of Solid Wood Construction for Residential Buildings	202
<i>Anton Kraler</i>	
Wood Ash As a Resource for the Production of Innovative Composite Materials	210
<i>Milena Properzi, Reto Pattis, Frédéric Pichelin</i>	
Strength Properties of Two-by-Four Salvaged Lumbers	217
<i>Shiro Nakajima, Tomonari Murakami</i>	
Study on Timber House Rebuilding System	225
<i>Koichi Matsuno, Yusaku Takahashi, Syunsuke Sakurai, Takashi Sekiguchi</i>	
Development of Grading Rules for Re-Cycled Timber Used in Structural Applications	231
<i>Keith Crews, Colin Mackenzie</i>	
Rapid and Nondestructive Evaluations of Wood Mechanical Properties by Near Infrared Spectroscopy	239
<i>Takaaki Fujimoto, Kazushige Matsumoto, Yohei Kurata, Satoru Tsuchikawa</i>	
Neuro-Fuzzy Inference of Sound Response of Timber for Non-Destructive Determination of Strength Groups	246
<i>Mohamad Omar-Khaidzir, Hamdan Husain</i>	
Non-Destructive Detection of Glue Line Defects in Glued Laminated Timber	254
<i>Simon Aicher, Gerhard Dill-Langer</i>	
Classification of Lumber of Eucalyptus Using Non-Destructive Tests	262
<i>Adriano Wagner Ballarin, Marcelo Nogueira, José Tarcísio Lima, Hernando Alfonso, Lara Palma</i>	
Development of Adhesive Bonded Timber-UHPC Composites Experimental and Theoretical Investigations	270
<i>Martin Schäfers, Werner Seim</i>	
Glulam-Concrete Composite Structures: Experimental Investigation Into the Connection System	278
<i>José Luiz Miotto, Antonio Alves Dias</i>	

Simulation of Grooved Connections in Timber-Concrete Composite Beams Considering the Distribution of the Material Properties	286
<i>Ulrike Kuhlmann, Pietro Aldi</i>	
Performance of Notched Coach Screw Connection for Timber-Concrete Composite Floor System	294
<i>David Yeoh, Massimo Fragiaco, Pietro Aldi, Marta Mazzilli, Ulrike Kuhlmann</i>	
Bridge Across Rena River - “World's Strongest Timber Bridge”	302
<i>Rune B. Abrahamsen</i>	
Footbridge Over the River Nevezis in Town Kedainiai, Lithuania	310
<i>Algirdas Baltrusaitis</i>	
New Timber Bridges in Croatia	317
<i>Miljenko Haiman</i>	
Covered Bridges in the United States and the Preservation Program	325
<i>Sheila Rimal Duwadi, James P. Wacker</i>	
Brazilian Handbook for the Design and Construction of Timber Bridges	333
<i>Carlito Calil Jr.</i>	
Development of Nailed/Screwed Modules for Stress Laminated Timber Arch Bridges	341
<i>Geoff Freedman, Abdy Kermani</i>	
Structural Reliability of Stress-Laminated Timber Bridges	349
<i>Andrés Batista Cheung, Malton Lindquist, Carlito Calil Jr.</i>	
The Design and Installation of the New Wooden Bridge in Aburatsu	357
<i>Hideyuki Hagiuda, Satoshi Okamura, Yasushi Onodera, Mikio Koshihara</i>	
Fatigue of Timber-Concrete-Composite Beams: Characterization of the Connection Behaviour Trough Push-Out Tests	364
<i>Ulrike Kuhlmann, Pietro Aldi</i>	
Development of a New Connector Type for Hybrid Timber Bridges	372
<i>Antje Simon, Wolfram Haedicke, Jens Mueller, Karl Rautenstrauch</i>	
Failure Test and Finite Element Analysis of Timber-Steel Hybrid Bridge	380
<i>Lajos Kiss, Takanobu Sasaki, Yasuo Iijima, Seizo Usuki</i>	
Cubic Spline Interpolation Function Fit with Rational Arch Axis of the Wooden Bridge	388
<i>Xu Deliang, Liu Weiqing</i>	
Engineering Design Values of Wood Based Composites	395
<i>Mizi Fan, Vahik Enjily</i>	
Improving Quality of Engineered Wood Products by Green Gluing Process	407
<i>Régis Pommier, Gérard Vierge, Garbay Guillaume, Pierre Morlier</i>	
Strengthening Timber with CFRP Or Steel Plates - Short and Long-Term Performance	414
<i>Robert Kliger, Mohammad Al-Emrani, Marie Johansson, Roberto Crocetti</i>	
Comparison of the Vibration Frequency and Damping of Beam Models Made of Dry and Wet Pine Wood	422
<i>Barbara Misztal</i>	
Wood Alternatives to Concrete Topping in Multi-Family and Non-Residential Wood-Based Floors	430
<i>Lin J. Hu, Richard Desjardins</i>	
Quality of Timber Construction-Guidance for Buildings and Load Bearing Structures	438
<i>Tomi Toratti</i>	

DVW-Reinforced Timber Beams for a Short Span Pedestrian Bridge	446
<i>Andreas Heiduschke, Peer Haller, Martin Hamann, Tilo Birk, Andrea Untergutsch, Rensteph Thompson</i>	
The Development of Wooden Prefabricated Truss System Utilizing Japanese Timbers	453
<i>Atsuo Takino, Katsuhiko Imai</i>	
Online Learning for the Forest and Timber Industries	461
<i>Dan Ridley-Ellis, Sabine Nolte, Peter Condon</i>	
Promoting the Science and Engineering of Timber to Children	469
<i>Dan Ridley-Ellis</i>	
Recruiting Women into Scottish Wood Chain Industries	477
<i>Dan Ridley-Ellis, Suzi Macpherson, Emily Thomson</i>	
Future of Finland’s Reconstruction Period Neighbourhoods	485
<i>Risto Suikkari, Anu Soikkeli, Kalle Reinikainen</i>	
Cross Cultural Workshop of Wooden Construction	493
<i>Chen Zhao, Jinlong Feng</i>	
Engaging Architecture Students in the Technologies - Timber in Design	496
<i>Peter Murray</i>	
A Study on Timber Structural Education Based on Competition Style	504
<i>Katsuhiko Kohara, Kazuyoshi Komoto, Asuka Takahashi</i>	
An Education Program “Building Pathology for Timber Architecture”	512
<i>Fumiko Misawa, Keiko Hirota</i>	
Fire Safety Performance of Wood-Framed Floor Assemblies: Thermal and Mechanical Failure	520
<i>Hisa Takeda</i>	
Natural Full-Scale Fire Test on a 3 Storey XLam Timber Building	528
<i>Andrea Frangi, Giovanna Bochicchio, Ario Ceccotti Cnr-Ivalsa, Marco Pio Lauriola</i>	
Fire Safety Constructions of Multi-storey Wooden Facades – Using Biogenic Materials Up to Eight Storeys	536
<i>Michael Merk, Stefan Winter</i>	
Evaluation of Fire Spread in Timber-Frame Buildings	544
<i>René Stein, Stefan Winter</i>	
VALERIE – Fire Risk Assessment to Wood Buildings	552
<i>Ario Ceccotti, Roberto Lenzi</i>	
A Study on Self-Charring-Stop of Glued Laminate Timber Made of Japanese Cedar Installing Mortar Pieces	560
<i>Hideo Oka, Hirokazu Ohashi, Nagao Hori</i>	

VOLUME 2

Fire-Resistive Buildings of Wood Frame Construction in Japan	568
<i>Junichi Izumi</i>	
Timber Escape Stairs: Using Timber Stairs As Means of Escape	575
<i>Julie Bregulla, Tom Lennon</i>	
Development of Small-scale Evaluation Methods for Wood Adhesives at Elevated Temperatures	583
<i>S. T. Craft, R. Desjardins, L. R. Richardson</i>	

On the Design of Timber Bolted Connections Subjected to Fire	591
<i>Peter Moss, Massimo Fragiaco, Carla Austruy, Andrew Buchanan</i>	
Thermomechanical Fire Analysis of Timber Composite Beams with Interlayer Slip	599
<i>Simon Schnabl, Igor Planinc, Goran Turk</i>	
Certification of Fire-Resistant Timber Structures in Korea	607
<i>Sang Sik Jang</i>	
Lateral-Torsional Buckling of Orthotropic Rectangular Section Beams	615
<i>Bambang Suryatmono, Adhijoso Tjondro</i>	
Predicting Bending Strength of Structural Lumber with Density and Knot information Extracted from X-ray Image	623
<i>Jung-Kwon Oh, Kwang-Mo Kim, Jung-Hwan Park, Jun-Jae Lee</i>	
Comparison of Machine Grading Methods for Canadian Hemlock	629
<i>David Barrett, Frank Lam, Hiba Anastas, Yu Chen</i>	
The Characteristics of Glued-Laminated Beams Made from Small Diameter Fast-Growing Species	635
<i>Evalina Herawati, Muh Yusram Massijaya, Naresworo Nugroho</i>	
Properties of UK-Grown Sitka Spruce: Extent and Sources of Variation	641
<i>John Moore, Andrew Lyon, Daniel Ridley-Ellis, Barry Gardiner</i>	
WAWABIMA: Outstanding Mechanical Properties of Some Lesser Known Timber Species in Ghana	649
<i>Maurice Brunner, Ernst Zürcher, Markus Reinhard, Charles K. Kankam, Emmanuel Appiah-Kubi</i>	
Relations between Mechanical Properties of Visual Stress Graded Dimension Lumbers of Chinese Fir	657
<i>Haiqing Ren, Wei Guo, Yafang Yin</i>	
Long-Term Behaviour of Laminated Veneer Lumber Members Prestressed with Unbonded Tendons	666
<i>Matthew Davies, Massimo Fragiaco</i>	
Evaluation of Stress Wave and Colorimetric Variables to Predict Flexural Properties of Brazilian Tropical Woods	674
<i>Cláudio Henrique Soares, Rafael Rocha Silveira, Ana Patricia Dos Santos, Mário Rabelo De Souza, José Arlete Alves Camargos</i>	
Grading by Non-Destructive Techniques and Assessment of the Mechanical Properties of Large Cross Section Coniferous Sawn Timber for Structural Use	681
<i>Guillermo Íñiguez, Francisco Arriaga, Ignacio Bobadilla, Miguel Esteban</i>	
Utilization of Sugi (Japanese Cedar) in Light Flame Construction	689
<i>Keiko Hosogaya, Tomoaki Soma, Kenji Kobayashi, Naoto Ando</i>	
Smoking Heat-treatment and Natural Drying of Cryptomeria Logs in a Reservoir	695
<i>Masanori Sadanari</i>	
Comparison of Existing Long Term Deformations with Models	701
<i>Jorg Schanzlin</i>	
Extreme Value Analysis of Moisture Induced Eigen-Stresses in Timber	709
<i>Martin Häglund, Fredrik Carlsson</i>	
Modeling of the Mechanosorptive Effect As a Memory-Shape Alloy	716
<i>Jean-Marie Husson, Frédéric Dubois, Nicolas Sauvat</i>	

Effects of Mat-forming Parameters on the Basic Properties of Bamboo Oriented Strandboard	724
<i>Shigehiko Suzuki, Ihak Sumardi, Yoichi Kojima</i>	
The Strength Behavior of Wood in Experiment and Simulations	731
<i>Steffen Franke, Bettina Franke, Kay-Uwe Schober, Karl Rautenstrauch</i>	
3D Lattice Model for Post-Yield and Fracture Behaviour of Timber	739
<i>Thomas Reichert, Daniel Ridley-Ellis</i>	
An Experimental Investigation of Mixed-mode Crack Growth Process in Orthotropic Viscoelastic Material	747
<i>Frédéric Dubois, Rostand Moutou Pitti, Nicolas Sauvat, Christophe Petit, Valéry Valle</i>	
Fracture of Spruce and Birch in the RT Crack Propagation Direction	753
<i>Pekka Tukiainen, Mark Hughes</i>	
Evaluation of the Fracture Toughness of Wood Welded Connections: Measurement of the Energy Release Rate by the Method of Experimental Compliance	760
<i>Christelle Ganne-Chédeville, Gilles Duchanois, Antonio Pizzi, Frédéric Pichelin, Jean-Michel Leban</i>	
Fracture Toughness Properties of Epoxy-Based Adhesives Reinforced with Nano and Microfiller Additions for <i>IN SITU</i> Timber Bonding	768
<i>Zakiah Ahmad, Martin Ansell, David Smedley, David Simpson</i>	
Modelling of Recovery of Residual Stress in Densified Wood	779
<i>Meng Gong, Ling Li, Y. H. Chui, Kecheng Li, Naxin Yuan</i>	
Bearing Strength Perpendicular to Grain of Timber	786
<i>Ad Leijten, Dennis Schoenmakers</i>	
The Performance of Lamina's Thickness for Horizontally Glued Laminated Beam	794
<i>Indah Sulistyawati, Yusuf Sudo Hadi, Surjono Surjokusumo, Naresworo Nugroho</i>	
Study on Visual Grading of Dimension Lumber of Chinese Fir	800
<i>Haiqing Ren, Wei Guo, Yafang Yin</i>	
Simulation Method to Generate the Strength of Glulam Using Correlated Random Variables	808
<i>Noboru Nakamura</i>	
Mechanical Properties of Colombian Glued Laminated Bamboo	815
<i>Juan F. Correal, Luis F. López</i>	
Potential of Finely Milled Powder of Kenaf Core as a Binder	821
<i>Motoe Ando, Masatoshi Sato</i>	
Mechanical Properties of Pinewood Treated with Aqueous Solutions of Organic Substances	828
<i>Pille Meier, Eve Stöör, Urve Kallavus, Tiit Kaps</i>	
Species Independent Machine Stress Grading of Hardwoods	834
<i>G.J.P. Ravenshorst, J.W.G. Van De Kuilen, M. Brunetti, A. Crivellaro</i>	
Strength Properties of Low MC Yellow-Poplar	842
<i>David E. Kretschmann, David W. Green</i>	
Mechanical Behaviour of Alternatively Laminated LVL Composed of Rubberwood Veneer and Falcata veneer	850
<i>Koji Murata, Sayaka Nakao, Kuniharu Yokoo</i>	
New Numerical and Experimental Approach for Mixed Mode Crack Growth in Wood by $M\theta_V$ Integral	858
<i>Rostand Moutou Pitti, France Frédéric Dubois, Christophe Petit</i>	

Flexural Properties of Structural Bamboo/Wood Box Beams	866
<i>Min-Chyuan Yeh, Yu-Li Lin, Wei-Chen Hong</i>	
Evaluating the Properties of Structural Oriented Strand Lumber Made from Recycled Demolition Waste Wood	872
<i>Tatsuya Shibusawa, Atsushi Miyatake, Koichi Yamamoto, Keisuke Hashimoto, Hozumi Sonobe</i>	
Lateral Buckling of I-Joists	880
<i>Daniel P. Hindman</i>	
Multifunctional Properties of Wood in Interior Use	887
<i>Tiina Vainio-Kailam, Pertti Viitaniemi</i>	
Experimental Study on Traditional Mud Shear Wall In-Filled in Timber Frames	894
<i>Wei-Jye Chen, Shin-Hung Chou, Min-Fu Hsu, Lo Mao</i>	
“Holzbau der Zukunft” – Future Building with Timber	902
<i>Arthur Wolfrum, Stefan Winter</i>	
Prestressed FRP Flexural Strengthening of Softwood Glue - Laminated Timber Beams	910
<i>James F. Brady, Annette M. Harte</i>	
Acoustic Performance of Timber Concrete Composite Floors	918
<i>Matthias Schmid</i>	
Stability Analysis of Eccentrically Loaded Wood Beam-Columns	926
<i>Xiaobin Song, Frank Lam</i>	
Measurement of Collapsing Process of Wooden House in Shaking Table Test using New Measurement Method with Image Processing	934
<i>Osamu Furuya, Satoshi Fujita, Yasushi Niitsu</i>	
Creep of LVL and Its Effect on the Structures	944
<i>H.Z. Zhou, E.C. Zhu, S.W. Wang</i>	
Development of Appropriate Utilization Technology of Melaleuca Wood in the Mekong Delta	954
<i>Masatoshi Sato</i>	
An Innovative Thermo Densification Method for Wooden Surfaces	962
<i>Lauri Rautkari, Milena Properzi, Frédéric Pichelin, Mark Hughes</i>	
Modelling of Failure Mechanisms of Locally Reinforced Timber Fasteners	970
<i>Zhongwei Guan, Masafumi Inoue</i>	
Moment Resistance of Bolted Timber Connections with Perpendicular to Grain Reinforcements	978
<i>Frank Lam, Michael Schulte-Wrede, C.C. Yao, James J. Gu</i>	
Capacity Predictions for Bolted Timber Joints Failing by Splitting	986
<i>César Echavarría</i>	
Design of Bolted Connections: A Comparison of a Proposal and Various Existing Standards	994
<i>P. Quenneville</i>	
Development of Limit State Design Method for Malaysian Bolted Timber Joints	1002
<i>Mohd Zamin Jumaat, Fadini Mohamad Razali, Ahmad Hazim Abdul Rahim</i>	
Improved Column-Beam Joint in Glulam Semi-Rigid Portal Frame	1010
<i>Kohei Komatsu, Mitsushi Akagi, Chiori Kawai, Takuro Mori, Shingo Hattori, Kiyoshi Hosokawa</i>	
Wood Material Parameters of Numerical Model for Bolted Connections-compression Properties and Embedment Properties	1018
<i>Jung-pyo Hong, David Barrett</i>	

New Estimation Method on Stiffness and Strength of Single-Shearing Screw Joints with Structural Panels	1026
<i>Kenji Kobayashi, Masahiro Inayama, Naoto Ando</i>	
Splitting Behaviour of Timber Loaded Perpendicular to the Grain by Punched Metal Plates	1034
<i>J.C.M. (Dennis) Schoenmakers, A.J.M. Jorissen, A.J.M. Leijten</i>	
Bending Test on Continuous Column with Various Mortise-Tenon Joints	1042
<i>Yin Wang, Masamitsu Ohta</i>	
Mechanical Analysis of Timber Connection Using 3D Finite Element Model	1048
<i>Bohan Xu, Mustapha Taazount, Patrick Racher</i>	
Timber Joints with High Strength Steel Dowels	1056
<i>J.W.G. Van de Kuilen, P.A. De Vries</i>	
Determination of Yield Point and Ductility of Timber Assemblies: in Search for a Harmonised Approach	1064
<i>Williams Muñoz, Alexander Salenikovich, Mohammad Mohammad, Pierre Quenneville</i>	
Friction Damping of Pre-Stressed Timber Joints	1072
<i>Ali Awaludin, Yoshihisa Sasaki, Akio Oikawa, Takuro Hirai, Toshiro Hayashikawa</i>	
Effect of Wood Decay on Embedding Performance of Wood and Shear Performance of Dowel-Type Joints and Nailed Joints	1078
<i>Kei Sawata, Hiroshi Takiuchi, Masahiko Toda, Takanobu Sasaki, Mitsunori Mori</i>	
Failure Characteristics of Engineered Wood Products Connections	1085
<i>Ian Smith, Monica Snow, Andi Asiz</i>	
Analysis of the Stress Distribution in the Semispace of the Steel Pinned Joint	1093
<i>Stjepan Taka?, Damir Varevac, Damir Markulak</i>	
Influence of the Number of Fastener on Tensile Strength of Lagscrewbolted Glulam Joint	1100
<i>Takuro Mori, Makoto Nakatani, Shigeaki Kawahara, Takeshi Shimizu, Kohei Komatsu</i>	
Waveform Effect on Fatigue Behaviour of Laterally Loaded Nailed Timber Joints	1108
<i>Meng Gong, Ling Li, Ian Smith</i>	
Full Strength Round Timber Pole Connection Using Annular Grooves	1116
<i>Hugh Morris, Mark Batchelar, Kenneth Teh</i>	
Effect of Moisture Content Variation on Short Term Dowel-Bearing Strength	1124
<i>Nicolas Sauvat, Octavian Pop, Seddik Merakeb, Frédéric Dubois</i>	

VOLUME 3

A Study on Brittle Fracture of Bolted Joint with Japanese Larch Glulam Loaded Perpendicular to the Grain Based on Local Fracture Approach	1132
<i>Wataru Kambe, Tadao Nakagomi</i>	
Performance of Composite-reinforced Timber Joints Using Single Dowel-Type Fasteners	1140
<i>Andreas Heiduschke, Peer Haller</i>	
Structural Composite Lumber Loaded by Dowels Perpendicular to Grain	1148
<i>David E. Finkenbinder, Daniel P. Hindman</i>	
Withdrawal Strength of New Type Connection with SUGI Compressed-Dowel	1156
<i>Takeshi Ohuchi, Mai Kinjyo, Yasuhide Murase, Yoshiyasu Fujimoto, Motoyoshi Ikeda</i>	
Tensile Capacity of Timber-Frame Mortise and Tenon Connections	1162
<i>Carson R. Walker, Fernando S. Fonseca, John P. Judd, Paul R. Thorley</i>	

Three-Dimensional Finite Solid Element Model for Japanese Post and Beam Connection	1168
<i>Jung-Pyo Hong, David Barrett</i>	
Semi rigid Timber Frame and Space Structure Connections by Glued-In Rods	1175
<i>Milan Vašek</i>	
Finite Element Model for Axial Stiffness of Metal-Plate-Connected Tension Splice Wood Truss Joint	1183
<i>Jose M. Cabrero, Kifle G. Gebremedhin</i>	
Nailplate Backout – is it a Problem in Plated Timber Trusses?	1191
<i>Phillip Paevere, Minh Nguyen, Michael Syme, Robert Leicester</i>	
Shear Characteristics of Wood Dowel Shear Joint and Practical Application Example	1198
<i>Hiroshi Fukuyama, Matti Kairi, Hannu Hirsi Hannu, Masahiro Inayama, Naoto Ando</i>	
Full-Scale Test and Analysis on Wooden Made Shear Plate for Timber Structure	1206
<i>Ken Kamachi, Koji Adachi, Kei Tanaka, Masahiro Inayama, Masafumi Inoue</i>	
Strain Analysis of Traditional Japanese Timber Joints Under Tensile Loading	1214
<i>Seiichiro Ukyo, Masahiko Karube, Masaki Harada, Tomoyuki Hayashi</i>	
Moment Resistance Performance of Traditional Timber Connections Comprised of Joining and Drift-Pin	1222
<i>Moon-Jae Park, Kweon-Hwan Hwang, Joo-Saeng Park</i>	
Behaviour of Tensile Strength and Displacement Concerning Big Screw Joint with Cross Laminated Panel	1228
<i>Keiichi Tsubouchi, Hideyuki Nasu, Hiroyuki Noguchi, Göran Forsberg, Anders Gustafsson, Carl-Johan Johansson</i>	
Design Methodology for Fastener Schedules on Sheathing Panels Subject to Negative Pressure	1235
<i>Edward Sutt, Robert Leichti, Tim Reinhold</i>	
Traditional Timber Joints – Experimental Investigation on Tapered Tenons	1243
<i>Heiko Koch, Martin Schäfers, Werner Seim</i>	
Simple Formulation of Elasto-Plastic Embedment Behavior of Orthotropic Wood Considering Densification	1250
<i>Hideaki Tanahashi, Masakatsu Okamura, Yoshiyuki Suzuki</i>	
Tenons and Tenoned Beams in Japanese Castle Donjons	1258
<i>Osamu Goto, Aihiko Minamoto, Martin Morris, Toru Horie, Satoshi Ono</i>	
Deterioration of Rafter in Historic Building of Fukushoji-Temple	1265
<i>Yukie Saito, Satoshi Shida, Masamitsu Ohta, Hirokazu Yamamoto, Tadatsugu Tai, Osamu Goto</i>	
Calculation Method for an Envelope Curve Based on Load Carrying Mechanism of Japanese Traditional Mud Wall with Uncovered Posts and Beams	1271
<i>Shigefumi Okamoto, Masahide Murakami</i>	
Present States and Maintenance Suggestions on Traditional Timber Residence in Shanghai	1278
<i>Minjuan He, Suyi Guo</i>	
Application of Ultrasonic Testing for Detecting Defects on Rafters of Ancient Wooden Building	1284
<i>Sang-Joon Lee, Hwanmyeong Yeo, Ki-Bok Kim, Jun-Jae Lee</i>	
Structural Analysis of the Timber Roofs of the “Arsenale” of Venice	1291
<i>Giulia Bettiol, Claudio Menichelli, Maria Rosa Valluzzi, Enrico Garbin, Claudio Modena</i>	
Development of Rational Guidelines for Traditional Joints in Oak Frame Construction	1299
<i>Jonathan Shanks, Pete Walker, Richard Harris</i>	

The Structural Performance of Traditional Oak Tension & Scarf Joints	1307
<i>Edward Hirst, Andrew Brett, Andrew Thomson, Peter Walker, Richard Harris</i>	
Shaking Table Tests of ‘MASUGUMI’ Used in Traditional Wooden Architectures	1315
<i>Hideo Kyuke, Toshihiro Kusunoki, Masashi Yamamoto, Shigeo Minewaki, Masahito Kibayashi</i>	
The Reconstruction Method of the Primitive Temporary Dwelling	1323
<i>Satoru Nimura, Osamu Goto</i>	
Earthquake Response Analysis of Traditional Japanese Timber Pagoda	1329
<i>Kaori Fujita, Kazuki Chiba, Naohito Kawai, Mikio Koshihara, Chikahiro Minowa, Toshikazu Hanazato</i>	
Seismic Isolation Retrofitting of Japanese Wooden Buildings	1337
<i>Junko Suga, Hiroyuki Ueda</i>	
A Study on the Size Effect of Bracket Complexes Used in Traditional Timber Structures on the Vibration Characteristics	1344
<i>Iuko Tsuwa, Mikio Koshihara, Kaori Fujita, Isao Sakamoto</i>	
Micro Tremor Measurements and Vibration Models of Japanese Pagodas	1352
<i>Naohito Kawai, Chikahiro Minowa, Toshikazu Hanazato, Hideyuki Maekawa</i>	
Investigation and Research for Effective Usage of Wood	1360
<i>Tatsuya Takahara, Osamu Goto, Hirokazu Yamamoto, Tadatsugu Tai, Saito Yukie</i>	
Application of Seismic Isolation System to a Japanese Traditional Wooden Building	1365
<i>Junya Sakai, Kinya Tagaki</i>	
Column Rocking Behavior of Traditional Wooden Buildings in Japan	1372
<i>Tatsuhiko Maeda</i>	
Traditional Timber Turkish Houses and Structural Details	1379
<i>Nimet Oztank</i>	
Workmanship in Service Life Planning	1387
<i>Appu Haapio, Pertti Viitaniemi</i>	
Computer Simulation of Structural Performance of Ladder-liked Timber Beam Used in Reinforcement of Japanese Traditional Wooden Temple	1393
<i>Ping Yang, Yoshiyuki Suzuki, Hideo Horie</i>	
Evaluation of Wide-Span Timber Structures - Results and Recommendations	1399
<i>Philipp Dietsch, Arthur Wolfrum, Stefan Winter</i>	
Multi-Criteria Evaluation of Light-Frame Wood Walls	1407
<i>Caroline D. Frenette, Robert Beauregard, Alexander Salenikovich, Michael Flach</i>	
Timber Grading Machine Using Ultrasonic and Density Measurements: TRIOMATIC	1415
<i>Jean-Luc Sandoz, Yann Benoit</i>	
Density Estimation by Vibration, Screw Withdrawal Resistance and Probing in Particle and Medium Density Fibre Boards	1423
<i>Ignacio Bobadilla, Francisco Arriaga, Miguel Esteban, Guillermo Iñiguez, Isidoro Blázquez</i>	
A New Approach of Grouping Wood Species and a Proposal of a Grading System of Timber in the Congo Basin	1431
<i>Jean Kisito, Ohandja Ayina, Pierre Morlier, Patrick Castera</i>	
Evaluating the Mechanical Properties of Wooden Components Using Drill Resistance Method	1439
<i>Yi-Jen Tseng, Min-Fu Hsu</i>	
Contact-Free Strain Measurement of Bi-Axially Loaded Sheathing-to-Framing Connection	1447
<i>Johan Vessby, Anders Olsson, Bertil Enquist</i>	

Defect Detection of Lumber Including Knots Using Bending Deflection Curve: Study by FEM Simulation	1455
<i>Hiroaki Nagai, Koji Murata, Takato Nakano</i>	
Experimental Study of Timber-to-Concrete Dowel Type Connections Used in Timber Platform Frame	1461
<i>Kenneth Leitch, Robert Hairstans, Derek Abbott, Robin Dodyk, Scott McAndrew</i>	
Effects of Size and Moisture on Stress Wave E-Rating of Structural Lumber	1469
<i>Xiping Wang</i>	
Service Life Models and Design Procedure of Metal Fasteners Subjected to Corrosion in Timber Structures	1477
<i>Minh N. Nguyen, Robert H. Leicester, Chi-Hsiang Wang, Greg C. Foliente</i>	
Long-Term Performance of Hybrid Timber Bridges – Experimental and Numerical Investigations	1485
<i>Jens Mueller, Wolfram Haedicke, Antje Simon, Karl Rautenstrauch</i>	
Habitable Basement Concepts Made in Timber Construction - Assessment on the Durability of Walls and Floor Slabs Made of Solid Cross-Laminated Timber Boards	1493
<i>Christoph Buxbaum, Oskar Pankratz, Marius Schorer, Werner Thalhammer</i>	
Modelling Relative Humidity Effect on Load Duration of Timber Beams	1501
<i>Myriam Chaplain, Gérard Valentin, Alaa Chateauneuf</i>	
Apply CEM and EDX Analysis to Evaluate the Combustion Emissions and Char of Preservative-Treated Woods and Wood Preservatives	1509
<i>Han Chien Lin, Yoshiyasu Fujimoto, Yasuhide Murase</i>	
Can Tg Be Used As a Service Temperature Indicator for the Selection of a Structural Adhesive?	1517
<i>João Custódio, Helena Cruz, David Rodrigues, James Broughton</i>	
Air Leakage and Moisture Deposition of Prefabricated Light-Frame Wood Building	1525
<i>Andi Asiz, Ian Smith, Veronica Menendez</i>	
Evaluation of Glued Laminated Timber Structures – Core Extraction and Shear Testing	1533
<i>Florindo Gaspar, Helena Cruz, Augusto Gomes</i>	
Prestressed Timber – Part 2: Tests on Structural Beams	1541
<i>João Negrão, Ana Balseiro, José Faria</i>	
Innovative Repair of Deteriorated Timber Piles Utilizing Nano-Polymer Composites	1549
<i>Daniel De Kee, Vijaya Gopu, Max Hetzer</i>	
Service Life Analysis of Marine Structures Made of Tropical Hardwoods	1557
<i>Nadine Edi Montaruli, Jan Willem G. Van De Kuilen, Rene G.J. Weersink, Theo Meerstadt</i>	
Mechanical Durability of Several Wood-based Panels Evaluated by Outdoor Exposure Tests and Accelerated Aging Treatments	1565
<i>Noboru Sekino, Hideaki Korai, Shigehiko Suzuki</i>	
Displacements in the Stabilizing System of a Glulam Beam-and-Post System	1573
<i>Gabriela Tlustochowicz, Helena Johnsson</i>	
Performance of Tall Wood-Frame Walls Subjected to Gravity and Wind Loads	1581
<i>Marjan Popovski, Daniel Leonard</i>	
The Improvement of Single-braced Shear Wall System	1589
<i>Satoru Murakami, Tomihiko Tamaoka, Hidenobu Kadowaki, Kohei Komatsu</i>	

Development of Earthquake Bracing Systems for Multi-Storey Buildings Using Slender Shear Wall Elements in Cross-Laminated Timber (CLT)	1596
<i>Kamyar Tavoussi, Wolfgang Winter, Tamir Pixner</i>	
Assessment of Seismic Design Parameters for Midply Wood Shear Wall System	1604
<i>Chun Ni, Maurizio Follesa, Marjan Popovski, Erol Karacabeyli</i>	
Earthquake-Proof Reinforcement of Deteriorated Frameworks of Existing Wooden Houses	1611
<i>Takuro Hirai, Chiemi Honma, Masataka Teranishi, Yoshihisa Sasaki, Takayoshi Uemastu</i>	
Mechanics-Based Model for Seismic Resistance of Conventional Wood-Frame Walls	1618
<i>Hans Rainer, Chun Ni, Erol Karacabeyli</i>	
Establishing Seismic Equivalency to Code-Listed Light-Frame Wood Wall Systems	1625
<i>Ned Waltz, Tom Skaggs, Philip Line</i>	
Shear Performance of Post and Beam Construction with Traditional Joint by Pre-Cut Process	1635
<i>Kweon-hwan Hwang, Joo-saeng Park, Korea Moon-jae Park, Kug-bo Shim</i>	
Shear Capacity of Cross-Laminated Wooden Walls	1641
<i>Bruno Dujic, Simona Klobcar, Roko Zarnic</i>	
The Braced Frame Shear Wall made of <i>Acacia Mangium</i> Fastened by nails for Anti-Seismic Wooden House	1649
<i>Maryoko Hadi, Bambang Subiyanto, Anita Firmanti, Kohei Komatsu</i>	
Allowable Strength of Various Shear walls for Post and Beam Structure in Japan	1655
<i>Minoru Okabe</i>	
A Plastic Design Procedure for Wood Frame Wall Diaphragms	1663
<i>Bo Källsner, Ulf Arne Girhammar</i>	
Shear Wall Test	1671
<i>Mohammed Ishaque, Ian Smith, Andi Asiz</i>	
Parametric Study of Shear Walls with Over-Driven Sheathing Nails	1679
<i>Samuel B. Brown, John P. Judd, Fernando S. Fonseca</i>	
Composite Wall Panel for Industrial Housing: Buckling Test	1685
<i>S.p.g. Moonen, W.c.a.m. Seijkens</i>	

VOLUME 4

Finite Element Analysis of the Racking Performance of Tall Unblocked Shear Walls	1694
<i>Chun Ni, Lina Zhou, Minjuan He</i>	
Performance of Corner Walls Against Uplift	1702
<i>Kugbo Shim, Chun Ni, Erol Karacabeyli</i>	
Effect of Transverse Walls on Capacity of Wood-Framed Wall Diaphragms without Tie-Downs	1710
<i>Ulf Arne Girhammar, Bo Källsner</i>	
Influence of Initial Gap Between Timber Members on Stiffness and Capacity of Shear Walls	1718
<i>Johan Vessby, Bo Källsner, Anders Olsson</i>	
Loss-Based Seismic Design for Woodframe Buildings	1726
<i>Shiling Pei, John W. van de Lindt</i>	

Evaluation of Seismic Performance of Wooden Frame with Mud Plaster Hanging Walls	1734
<i>Hidemaru Shimizu, Natsuka Hosoiri, Hiroyuki Nakaji, Yoshiyuki Suzuki, Masami Goto, Teruo Kamada</i>	
Collapsing Process Simulations of Wooden Houses by the Extended Distinct Element Method	1740
<i>Takafumi Nakagawa, Naohito Kawai, Takahiro Tsuchimoto, Masamitsu Ohta</i>	
Design and Construction of Orestressed Timber Buildings for Seismic Areas	1746
<i>Tobias Smith, Stefano Pampanin, Massimo Fragiacommo, Andy Buchanan</i>	
The Results of Shaking Table Test and Dynamic Response Analysis of Traditional Timber Pagoda in Japan	1754
<i>Kazuki Chiba, Kaori Fujita, Naohito Kawai, Mikio Koshihara, Chikahiro Minowa, Toshikazu Hanazato</i>	
Modeling 3-D Response of Japanese Post and Beam Structures	1762
<i>Frank Lam, Minghao Li, Shiro Nakajima, Naohito Kawai</i>	
Collapsing Response Analyses of Existing Wood Houses Corresponding to Shaking Table Test	1770
<i>Tatsuya Miyake, Chikahiro Minowa, Hiroshi Isoda, Mikio Koshihara, Takahiro Tsuchimoto, Isao Sakamoto</i>	
Sensitivity Analysis of a Bolted Timber Joint	1778
<i>Jérôme Humbert, Julien Baroth, Laurent Daudeville, Motoi Yasumura</i>	
Seismic Behaviour of Historic Wooden-Frame Buildings	1786
<i>Ario Ceccotti, Monica Nart</i>	
Fragility of Residential Wood Structures Built in Regions of Low-to-Moderate Seismicity	1794
<i>David V. Rosowsky, Weichiang Pang, Yue Wang, Bruce R. Ellingwood</i>	
Collapsing Behavior of Reconstructed Reinforced and Non-reinforced Wood Houses under Strong Earthquake	1802
<i>Takahiro Tsuchimoto, Isao Sakamoto, Chikahiro Minowa, Naohito Kawai, Hiroshi Isoda, Tatsuya Miyake, Ken-ichi Sugimoto</i>	
Seismic Behaviour of Prestressed Timber Columns Under Bi-Directional Loading	1810
<i>Asif Iqbal, Stefano Pampanin, Andy Buchanan</i>	
Reliability-Based Seismic Damage Modeling and Analysis of Woodframe Structures	1818
<i>Hao Liang, Greg Foliente, Yi-Kwei Wen</i>	
Direct Displacement Design for Multistory Woodframe Structures in Seismic Regions	1819
<i>David V. Rosowsky, Florence Wiley, Weichiang Pang</i>	
Dynamic Model for 3D Timber Structures with Plywood-Sheathed Shear Walls	1827
<i>Nicolas Richard, Motoi Yasumura, Motoi Uesugi</i>	
Seismic Analysis of Probability Based Life Cycle Cost for Wood Frame Structures	1834
<i>James Jianzhong, Frank Lam, C.C. Yao</i>	
Shake Table Tests on 3-Storey Wood Hybrid Structures	1842
<i>Haibei Xiong, Chun Ni, Xilin Lu, Guocheng Jia</i>	
Full-Scale Shaking Table Tests of 3-Story Wood-Frame Construction Buildings	1850
<i>Hiroshi Okiura, Naohito Kawai, Hiroshi Isoda, Makoto Kawai, Hiroshi Umemori, Tsuyoshi Murakami, Tomonori Murakami</i>	
Shaking Table Test and Seismic Property Evaluation of Wooden house with Various Types of Shear Walls	1858
<i>Hiroshi Umemori, Nobuto Tsuzuki, Kenji Miyazawa</i>	

Seismic Performance Verification of Traditional Wooden House Based on Cyclic Loading Tests and Analytical Methods	1866
<i>Hiroyuki Nakaji, Koji Yamada, Tatsuru Suda, Yoshiyuki Suzuki</i>	
Performance-Based Evaluation of Base Isolated Light-Frame Wood Structures	1874
<i>Hongyan Liu, John W. van de Lindt, Michael D. Symans</i>	
Performance-Based Seismic Design of Mid-Rise Light-Frame Wood Buildings: An Overview of the NEESWood Project	1882
<i>John W. van de Lindt, David V. Rosowsky, Andre Filiatrault, Rachel A. Davidson, Michael D. Symans</i>	
A Research Project of Earthquake Hazard Mitigation of Existing Wooden Houses – the Brief Results of a Five-Year Project	1890
<i>Izumi Nakamura, Hidemaru Shimizu, Chikahiro Minowa, Isao Sakamoto, Yoshiyuki Suzuki</i>	
Three Dimensional Elasto-plastic Analysis Method of Wooden House and It's Application to Evaluation of Seismic Property	1898
<i>Kenji Miyazawa, Takanori Akiyama</i>	
Development of Joint System Using by Compressed Wooden Fastener	1906
<i>Kiho Jung, Akihisa Kitamori, Munekazu Minami, Kohei Komatsu</i>	
A Way to Sustainable Architecture by New Technologies for Engineered Timber Structures	1914
<i>N/A</i>	
Full-Scale Experiment on Traditional Timber Frames of Taiwan	1915
<i>Wen-Shao Chang, Min-Fu Hsu, Lo Mao</i>	
Finite Semi-Rigid Study of Light Timber Nailed Structures	1923
<i>Thierry Descamps, Sélim Datoussaïd, Laurent Van Parys</i>	
A Wooden Cantilevered View Walkway in Vitoria, Spain	1931
<i>José L. Fernández-Cabo</i>	
Bending Reinforcement of Wooden Beams with Steel Cross-Sections	1939
<i>Carlos González-Bravo, Francisco Arriaga-Martitegui, Rafael Díez-Barra</i>	
Estimation of Shear Modulus by FEM Bending Simulation of Steel-Plate-Inserted Glulam Wood Beams	1947
<i>Humihiko Gotou , Masahide Daikokuya , Tomohiro Chida , Seizo Usuki</i>	
Metal Reinforcement for Pine Glulam Beams As a Strategy to Enhance Mechanical Behaviour	1954
<i>Jorge Daniel De Melo Moura, Marcos F. Barnabé, Ricardo Dias Silva, Everaldo Pletz, Gilberto Cabonari</i>	
Design of Safe Timber Structures – How Can We Learn from Structural Failures in Concrete, Steel and Timber?	1962
<i>Eva Frühwald, Sven Thelandersson</i>	
Structural Performance of Prefabricated Wood Building During Handling and Transportation	1970
<i>Gopinath Gupta, Andi Asiz, Ian Smith</i>	
The Bad Reichenhall Ice-Arena Collapse and the Necessary Consequences for Wide Span Timber Structures	1978
<i>Stefan Winter, Heinrich Kreuzinger</i>	
Monitoring of Wide-Span Timber Roof Structures - Development of a Monitoring System	1986
<i>Robert Pawlowski, Klaudius Henke, Heinrich Kreuzinger, Stefan Winter, Peter Schregle</i>	
Structural Behaviour of Wood Diaphragms with Thick Sheathing	1994
<i>Ciprian Pirvu</i>	

Finite Element Modelling of Buckling Behaviour of Steel Webbed Timber Joists	2001
<i>Zhongwei Guan, James Gendall</i>	
Study on Wall Quantity and Wall Balance Based on Seismic Response Analysis of Wooden House in Consideration of Horizontal Diaphragm	2009
<i>Hiroshi Waki, Hiroyuki Noguhi, Yoshiaki Uchiyama, Yasushi Watanabe</i>	
New Applications in Timber Construction	2017
<i>Yves Weinand, Johannes Natterer</i>	
Wind Tunnel Tests and Structural Monitoring of a Wood Building	2026
<i>Ioannis Zisis, Ted Stathopoulos, Ian Smith, Khaled Galal</i>	
Multistorey Hybrid Wood-Steel/Concrete Construction in USA	2034
<i>Kevin Cheung</i>	
Pseudo-Dynamic Lateral Load Tests on Full-Scale Two Storywooden Structure with Moment Resisting Frames	2040
<i>Motoi Yasumura, Motoi Uesugi, Luc Davenne, Tetsuya Suzuki</i>	
Full-Scale Shaking Table Tests of Wood Framed Houses: Comparison between Braced System and Cross Panel System	2047
<i>Yoshimitsu Ohashi, Makoto Watahiki, Ken-Ichi Machida</i>	
Measurement of OSB Properties and Their Variability for Modeling Purposes	2054
<i>Jean-Frédéric Grandmont, Richard Desjardins, Alain Cloutier, Guy Gendron</i>	
Effects of Human Load on Vertical Dynamic Characteristics of Wooden Beam Floor	2061
<i>Eiichi Fujino, Shuzo Suzuki, Hiroyuki Noguchi</i>	
Long-Term Simulations of Timber-Composite Structures in Consideration of Hygro-Thermal Effects	2069
<i>Wolfram Haedicke, Jens Mueller, Karl Rautenstrauch</i>	
Effects of Local Stiffening on the Dynamic Performance of Timber Floors	2077
<i>Jan Weckendorf, Binsheng Zhang, Abdy Kermani, David Reid</i>	
Glulam Structures in Croatia - Last Five Years	2083
<i>Boris Baljkas, Miljenko Haiman</i>	
ORIGAMI - Folded Plate Structures, Architecture	2090
<i>Hani Buri, Yves Weinand</i>	
ORIGAMI - Folded Plate Structures, Engineering	2098
<i>Marcel Haasis, Yves Weinand</i>	
IFS-Modeling for Feasible Freeform Timber Constructions	2105
<i>Ivo Stotz, Yves Weinand</i>	
Static Performance of Prefabricated Timber-Concrete Composite Systems	2113
<i>Elzbieta Lukaszewska, Massimo Fragiaco</i>	
A Study on Plywood's Shear Buckling and Shear Stress Distribution of Bearing Wall In-Plane Shear Force by Wooden Panel Construction	2121
<i>Ayumu Mitsuhashi, Hisamitsu Kajikawa, Haruhiko Ogawa, Hiroyuki Noguhi</i>	
A Study on the Deformation Properties of Wooden Shear Wall and Beam Stiffened with Inserted Glass Plates in Response to Applied Load	2129
<i>Chang Suk Song, Masahiro Inayama, Naoto Ando</i>	
Determining the Shear Modulus of Sitka Spruce from Torsion Tests	2137
<i>Amir Khokhar, Hexin Zhang, Daniel Ridley-Ellis, John Moore</i>	
Vibration Performance of LVL-Concrete Composite Floor Systems	2145
<i>Nor Hayati Abdghafar, Bruce Deam, Massimo Fragiaco, Andy Buchanan</i>	

Development of Semi-Prefabricated Timber-Concrete Composite Floors in Australasia	2152
<i>David Yeoh, Massimo Fragiaco, Andy Buchanan, Keith Crews, Jenny Haskell, Bruce Deam</i>	
Performance of Wood-Concrete Beams Under Repeated and Sustained Loading	2160
<i>Jeno Balogh, Massimo Fragiaco, Richard M. Gutkowski, Ryan S. Fast</i>	
Modeling of Shear Transfer in Wood-Concrete Notch-Connections	2168
<i>Zsuzsa Balogh, Richard Gutkowski</i>	
The Savill Garden Gridshell Design and Construction	2174
<i>Richard Harris, Jonathan Roynon</i>	
Modelling of Multi Layer Beam with Inter-Layer Slips	2181
<i>Johannes Natterer, Yves Weinand</i>	
Design of an 8 Storey Residential Tower from KLH Cross Laminated Solid Timber Panels	2189
<i>Megan Yates, Matt Linegar, Bruno Dujic</i>	
Static Load Test of a Low Rise Wood Building	2197
<i>Mohammed Ishaque Noory, Ian Smith, Andi Asiz</i>	
Damping Characteristics of Timber Flooring Systems with Respect to Low-Frequency Vibration Modes	2205
<i>Jan Weckendorf, Binsheng Zhang, Abdy Kermani, David Reid, Palle Andersen</i>	
Understanding the Composite Characteristics of Stressed-Skin Panels	2213
<i>Christophe Gerber, Keith Crews, Christophe Sigrist</i>	
Wooden Floor Structures with High Transverse Stiffness	2219
<i>Anders Olsson, Kirsi Jarnerö, Bo Källsner</i>	
Development of Frame Structures for Multistory Buildings with Partial Bending Stiffness Using Timber Steel Hybrid Members with Improved Fire Resistance	2227
<i>Bunji Izumi, Yoshiaki Amino, Chi-Jen Chen, Wolfgang Winter</i>	
Author Index	