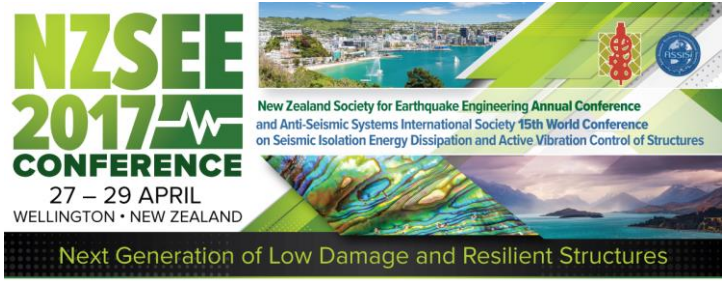

Conference Programme 27 – 29 April 2017 (subject to change)

Wednesday 26 April		
Time	Venue	
14.00 – 18.00	**Michael Fowler Centre**	**Registration Open** *For those in Wellington we encourage you to come to the venue on Wednesday afternoon to pick up your name tag and programme. This will ensure you can head straight to the Auditorium for the Conference Opening on Thursday at 8.50am.*
Thursday 27 April		
08.00 – 19.30	**Michael Fowler Centre**	**Registration** **Please ensure you are seated in the Auditorium for 8.50am promptly.**
08.50 – 09.15	**Auditorium**	**NZSEE 2017 & 15WCSI Official Opening and Welcome** **Mayor Justin Lester** David Whittaker, Conference Convenor Peter Smith, President, NZSEE Gianmario Benzoni, ASSISi

NOTE parallel session presentation times, including questions: Orals 15 min.

The Society gratefully acknowledges the principal sponsorship of the Earthquake Commission and all other sponsors

09.15 – 10.30	**Auditorium**	**Plenary 1a Kaikoura Earthquake – Government View** Chair: Peter Smith PL1A.1 **IMPACT OF THE 2016 KAIKOURA EARTHQUAKE** Hon Steven Joyce, Minister of Finance, and Minister for Infrastructure PL1A.2 **MANAGING IN AMBIGUITY -** Bruce Pepperell, Wellington Region Emergency Management Office PL1A.3 Sarah Stuart-Black, Ministry of Civil Defence and Emergency Management		
10.30 – 11.00	**Ground Floor and Level 1 Foyer**	**Morning Tea**		
11.00 – 12.30	**Auditorium**	**Plenary 1b Kaikoura Earthquake – Technical Aspects** Chair: Nick Horspool PL1B.1 **EARTHQUAKE SOURCE CHARACTERISTICS** Caroline Holden, GNS PL1B.2 **GROUND MOTION AND SITE EFFECTS OBSERVATIONS FROM THE 2016 M_W7.8 KAIKOURA EARTHQUAKE** Liam Wotherspoon, University of Auckland PL1B.3 **LANDSLIDES CAUSED BY THE 14 NOVEMBER 2016 KAIKOURA EARTHQUAKE AND THE IMMEDIATE RESPONSE** Sally Dellow, GNS PL1B.4 **KAIKŌURA EARTHQUAKE: THE EFFECTS ON ROADS AND RAIL INFRASTRUCTURE INCLUDING STRUCTURES, AND IMPORTANTLY THE PROPOSED AND COMPLETED RECOVERY** David Loe, North Canterbury Transport Infrastructure Recovery PL1B.5 **WELLINGTON BUILDING PERFORMANCE IN THE 2016 KAIKOURA EARTHQUAKE** Peter Smith, Spencer Holmes PL1B.6 **STATISTICS HOUSE INVESTIGATION** John Hare, Holmes Consulting Group		
12.30 – 13.30	**Ground Floor and Level 1 Foyer**	**Lunch and Poster Session 1**		
13.30 – 15.30	**Session 1**	**1A: Structure – Steel** **Room: Auditorium** Chair: Charles Clifton	**1B: Assisi Invited Speakers Country Reports** **Room: Renouf 2**	**1C: Innovative Foundation and Ground Improvement & Progress in Geotechnical Design**

NOTE parallel session presentation times, including questions: Orals 15 min.

The Society gratefully acknowledges the principal sponsorship of the Earthquake Commission and all other sponsors

			Chair: Paolo Clemente	**Room: Lion Harbourview Lounge** Chair: Liam Wotherspoon
13.30 – 13.45		O1A.1 **RECENT NZ APPLICATIONS OF, AND DEVELOPMENTS IN, LOW DAMAGE TECHNOLOGY FOR STEEL STRUCTURES** Gregory MacRae	O1B.1 **HISTORY OF *ASSISI*** Alessandro Martelli	O1C.1 **EVERGREEN LINE RAPID TRANSIT PROJECT: DEEP FOUNDATION AND GROUND IMPROVEMENT SOLUTIONS** Ali Azizian
13.45 – 14.00		O1A.2 **COMPARISON OF SEISMIC DESIGN PROVISIONS FOR BUCKLING RESTRAINED BRACED FRAMES IN CANADA, UNITED STATES, CHILE, AND NEW ZEALAND** Zahid Hamid	O1B.2 **RECENT DEVELOPMENTS IN NEW ZEALAND IN SEISMIC ISOLATION, ENERGY DISSIPATION AND VIBRATION CONTROL OF STRUCTURES (2017)** David Whittaker	O1C.2 **IN-GROUND CELLULAR STRUCTURE AS A FOUNDATION SYSTEM** Ayoub Riman
14.00 – 14.15		O1A.3 **QUANTIFYING LENGTH-EFFECTS ON BUCKLING-RESTRAINED BRACES THAT ARE CONSIDERABLY LONGER THAN THE ASSOCIATED QUALIFICATION TEST** Brandt Saxey, Paul Richards	O1B.3 **STATE OF THE ART ON APPLICATION, R&D AND DESIGN RULES FOR SEISMIC ISOLATION AND ENERGY DISSIPATION FOR BUILDINGS, BRIDGES AND VIADUCTS, CULTURAL HERITAGE AND CHEMICAL PLANTS IN TURKEY** Mustafa Erdik	O1C.3 **SOUTH BRITISH HOUSE - SEISMIC UPGRADE OF A BUILDING FOUNDED ON LIQUEFIABLE SOILS** Craig Lavin
14.15 – 14.30		O1A.4 **AN EXPERIMENTAL STUDY ON THE ASYMMETRIC FRICTION CONNECTION (AFC) OPTIMUM INSTALLED BOLT TENSION** Shahab Ramhormozian	O1B.4 **RECENT DEVELOPMENTS AND APPLICATIONS OF SEISMIC ISOLATION, ENERGY DISSIPATION AND VIBRATION CONTROL TECHNOLOGIES IN NORTH AMERICA** Ian Aiken	O1C.4 **RESEARCH RESULTS FROM A STUDY INTO RESIN INJECTION FOR SEISMIC LIQUEFACTION MITIGATION** Nick Traylen

The Society gratefully acknowledges the principal sponsorship of the Earthquake Commission and all other sponsors

14.30 – 14.45		O1A.5 **INCREASING SEISMIC RESILIENCE OF PALLET RACKING SYSTEMS USING SLIDING FRICTION BASEPLATES** Zhenghao Tang	O1B.5 **STATE-OF-THE-ART OF DEVELOPMENT AND APPLICATION OF ANTI-SEISMIC SYSTEMS IN ITALY** Alessandro Martelli	O1C.5 **EARTHQUAKE DESIGN OF FLEXIBLE SOIL RETAINING STRUCTURES** John Wood
14.45 – 15.00		O1A.6 **OUT-OF-PLANE STABILITY OF GUSSET PLATES USING A NOTIONAL LOAD YIELD LINE METHOD** Behnam Zaboli	O1B.6 **PROGRESS AND APPLICATION ON SEISMIC ISOLATION, ENERGY DISSIPATION AND ACTIVE VIBRATION CONTROL IN CHINA** Ping Tan	O1C.6 **INSIGHTS THROUGH DYNAMIC ANALYSIS OF STRUCTURES A LIQUEFIED SITES** Jonathan D. Bray
15.00 – 15.15		O1A.7 **EXPERIMENTAL VALIDATION OF ROCKING CBFS WITH DOUBLE ACTING RING SPRINGS** Gary Djojo	O1B.7 **DEVELOPMENT AND APPLICATION OF SEISMIC ISOLATION AND RESPONSE CONTROL OF BUILDING IN JAPAN** Mineo Takayama	O1C.7 **PARAMETER STUDY TO EXAMINE ROLE OF 3D GEOMETRIC EFFECTS ON BRIDGE FOUNDATION LOADS RESULTING FROM DEMANDS OF LIQUEFACTION-INDUCED LATERAL SPREADING** Christopher McGann
15.15 – 15.30		O1A.8 **SHAKE TABLE TESTING OF LOW DAMAGE STEEL BUILDING WITH ASYMMETRIC FRICTION CONNECTIONS** Ali. A. Rad	O1B.8 **RECENT PROGRESS IN TAIWAN ON SEISMIC ISOLATION, ENERGY DISSIPATION, AND ACTIVE VIBRATION CONTROL** Kuo-Chun Chang	O1C.8 **EXPERIMENTAL STUDY OF THE INTERACTION BETWEEN ADJACENT STRUCTURES** Gonzalo Barrios
15.30 – 16.00	**Ground Floor and Level 1 Foyer**	**Afternoon Tea**		
16.00 – 17.00	**Auditorium**	**Keynote Address:** Chair: David Whittaker K-01 **QUEST FOR RESILIENCE FROM A STIFFNESS APPROACH SEISMIC DESIGN OF RC BUILDINGS IN CHILE** Renee Lagos, University of Chile		

NOTE parallel session presentation times, including questions: Orals 15 min.

The Society gratefully acknowledges the principal sponsorship of the Earthquake Commission and all other sponsors

17.00 – 18.00	**Auditorium**	**NZSEE SGM & AGM** Peter Smith, President, NZSEE
17.00 – 18.00	**Lion Harbourview**	**ASSISi Meeting** Gianmario Benzoni, President, ASSISi
18.00 – 19.30	**Ground Floor and Level 1 Foyer**	**Cocktail Reception**

Friday 28 April

08.00 – 18.00	**Michael Fowler Centre**	**Registration Open**		
08.30 – 09.15	**Auditorium**	**Keynote Address:** Chair: David Whittaker K-02 **WORLD PROGRESS OF SEISMIC ISOLATION AND ENERGY DISSIPATION** Gianmario Benzoni		
09.15 – 09.20		**Move to next session**		
09.20 – 10.35	**Session 2**	**2A: Concrete I – Wall Research** **Room: Auditorium** Chair: Timothy Sullivan	**2B: Assisi Invited Speakers and Code Development** **Room: Renouf 2** Chair: Ian Aiken	**2C: Infrastructure Geotechnical Design** **Room: Lion Harbourview Lounge** Chair: Misko Cubrinovski
09.20 – 09.35		O2A.1 **LARGE-SCALE TESTING OF REINFORCED CONCRETE WALLS WITH HIGH AXIAL LOADS** Chris Motter	O2B.1 **MONITORING OF SEISMIC ISOLATED BUILDINGS: STATE OF THE ART AND RESULTS UNDER HIGH AND LOW ENERGY INPUTS** Paolo Clemente	O2C.1 **SEISMIC ASSESS AND DESIGN OF UNDERGROUND UTILITIES** Philip McFarlane

NOTE parallel session presentation times, including questions: Orals 15 min.

The Society gratefully acknowledges the principal sponsorship of the Earthquake Commission and all other sponsors

09.35 – 09.50		O2A.2 **IN-PLANE TESTING OF PRECAST CONCRETE WALL PANELS WITH GROUTED SLEEVE CONNECTIONS** Pouya Seifi	O2B.2 **THE NEXT GENERATION OF CODES FOR SEISMIC ISOLATION IN THE UNITED STATES** Ron Mayes	O2C.2 **RESILIENCE ASSESSMENT OF STATE HIGHWAYS IN NEW ZEALAND** Doug Mason
09.50 – 10.05		O2A.3 **EFFECT OF REINFORCEMENT COMPRESSION CAPACITY ON BEHAVIOUR OF REINFORCED CONCRETE WALLS** Mayank Tripathi	O2B.3 **THE EUROPEAN STANDARD ON ANTI-SEISMIC DEVICES** Renzo Medeot	O2C.3 **SEISMIC PERFORMANCE OF TWO WATER STORAGE DAMS DURING THE MW 6.6 LAKE GRASSMERE EARTHQUAKE IN AUGUST 2013** Rambod Amigh
10.05 – 10.20		O2A.4 **EVALUATION OF NEW ZEALAND CODE REQUIREMENTS RELATED TO INSTABILITY FAILURE OF STRUCTURAL WALLS** Stefano Pampanin	O2B.4 **STATE OF THE ART OF SEISMIC ISOLATION AND ENERGY DISSIPATION IN RUSSIA** Lyubov Smirnova	O2C.4 **LINING DESIGN SOLUTIONS TO SEISMIC FAULT OFFSETS ON THE JWPCP EFFLUENT OUTFALL TUNNEL** Yiming Sun, Jan VanGreunen
10.20 – 10.35		O2A.5 **NONLINEAR PARAMETRICANALYSIS OF COUPLED WALL SYSTEMS** Arash Pir	O2B.5 **DISCUSSION SESSION**	O2C.5 **HOW MANY HOUSES CAN WE EXPECT TO SUFFER LAND-RELATED BUILDING DAMAGE FROM EARTHQUAKES IN NEW ZEALAND?** Michael Drayton
10.35 – 11.05	**Ground Floor and Level 1 Foyer**	**Morning Tea**		
11.05 – 12.35	**Session 3**	**3A: Concrete II – Frame Research** **Room: Auditorium** Chair: Stefano Pampanin	**3B: Damping & Dissipative systems** **Room: Renouf 2** Chair: Geoffrey Rodgers	**3C: Seismicity and Ground Motion** **Room: Lion Harbourview Lounge** Chair: Caroline Holden

NOTE parallel session presentation times, including questions: Orals 15 min.

The Society gratefully acknowledges the principal sponsorship of the Earthquake Commission and all other sponsors

11.05 – 11.20		O3A.1 **SEISMIC PERFORMANCE VARIATION OF REINFORCED CONCREATE COLUMNS WITH INCREASED AXIAL LOAD** Takaya Nakamura	O3B.1 **NEWLY DEVELOPED PASSIVE DAMPING AND SEISMIC ISOLATION DEVICES WITH ADAPTIVE POST-ELASTIC STIFFNESS** Murat Dicleli	O3C.1 **THE TRANSITION PERIOD T_L IN THE RECOMMENDED SPECTRA OF THE DRAFT *NEW ZEALAND SEISMIC ISOLATION GUIDELINES*** Graeme McVerry
11.20 – 11.35		O3A.2 **DATABASE INVESTIGATION ON BOND PERFORMANCE OF INTERIOR BEAM-COLUMN JOINTS WITH HIGH-STRENGTH REINFORCEMENT** Hsi-Ching Chen, Hung-Jen Lee	O3B.2 **RETROFIT OF STRUCTURES USING A 2-4 DIRECTION AND DISPLACEMENT DEPENDENT (D3) VISCOUS DAMPER** Nikoo K. Hazaveh	O3C.2 **SURFACE RUPTURE HAZARD ZONATION:** Clark Fenton
11.35 – 11.50		O3A.3 **BENEFITS OF TOP STRAND AND STEEL FIBRES IN THE DESIGN AND MANUFACTURE OF HOLLOWCORE PRECAST FLOOR SLABS** Nicholas Brazzale, Daniel Kennett	O3B.3 **OPTIMUM DYNAMIC CHARACTERISTIC CONTROL APPROACH FOR BUILDING MASS DAMPER DESIGN** Shiang-Jung Wang	O3C.3 **EFFECT OF EXPLICITLY REPRESENTING BUILDINGS ON TSUNAMI INUNDATION: A PILOT STUDY OF WELLINGTON CBD IN AN MW9 HIKURANGI EARTHQUAKE SCENARIO** Xiaoming Wang
11.50 – 12.05		O3A.4 **INTERACTION BETWEEN THE STRUCTURAL WALLS, FLOORING SLAB AND GRAVITY COLUMNS** Reza E Sedgh	O3B.4 **TOP-STORY MASS DAMPERS FOR SEISMIC CONTROL OF ASYMMETRIC-PLAN BUILDINGS** Jui-Liang Lin	O3C.4 **PROGRESS AND CHALLENGES IN OPERATIONAL EARTHQUAKE FORECASTING IN NEW ZEALAND** Annemarie Christophersen
12.05 – 12.20		O3A.5 **EXPERIMENTAL AND ANALYSIS OF A SELF-CENTERING PRECAST REINFORCED CONCRETE SHEAR WALL** Anqi Gu	O3B.5 **SIMPLIFIED VS. OPTIMAL TECHNIQUES FOR VISCOUS DAMPER DESIGN: SOME PRELIMINARY OBSERVATIONS** Arun Puthanpurayil	O3C.5 **COMMUNITY MODIFIED MERCALLI INTENSITIES DERIVED FROM GEONET'S ONLINE QUESTIONNAIRES** Tatiana Goded

NOTE parallel session presentation times, including questions: Orals 15 min.

The Society gratefully acknowledges the principal sponsorship of the Earthquake Commission and all other sponsors

12.20 – 12.35		O3A.6 **POST-SEISMIC CAPACITY OF DAMAGED AND REPAIRED REINFORCED CONCRETE PLASTIC HINGES EXTRACTED FROM A REAL BUILDING: EXPERIMENTAL AND NUMERICAL INVESTIGATION** Alberto Cuevas	O3B.6 **DYNAMIC TESTS OF SRIM FLUID VISCOUS DAMPERS** Demin Feng	O3C.6 **A COMPARISON BETWEEN GEONET'S 'FELT RAPID' AND 'FELT DETAILED' ONLINE QUESTIONNAIRES** Tatiana Goded
12.35 – 13.35	**Ground Floor and Level 1 Foyer**	**Lunch & Poster Session 2**		
13.35 – 15.30	**Auditorium**	**Plenary 2 Design for Damage Control in Structures** Chair: David Whittaker PL2.1 **TOWARDS THE "ULTIMATE EARTHQUAKE-PROOF" BUILDING: ENHANCING RESILIENCE THROUGH AN INTEGRATED LOW-DAMAGE BUILDING SYSTEM** Stefano Pampanin, University of Canterbury & University of Rome 'La Sapeinza' PL2.2 **IMPLEMENTING LOW-DAMAGE BUILDING TECHNOLOGIES: AN OVERVIEW OF RESEARCH IN ITALY** Felice Ponzo, University of Basilicata PL2.3 **DAMAGE RESISTANT TECHNOLOGIES FOR BRIDGES: A NATURAL PATHWAY TOWARDS RESILIENCE BASED DESIGN** Alessandro Palermo, University of Canterbury PL2.4 **GEOTECHNICAL PERSPECTIVES FOR DAMAGE CONTROL IN STRUCTURES** Misko Cubrinovski, University of Canterbury PL2.5 **LOW-DAMAGE BUILDINGS GUIDANCE DOCUMENT** David McGuigan, MBIE PL2.6 **DEVELOPMENT OF GUIDELINES FOR THE DESIGN OF SEISMIC ISOLATION SYSTEMS FOR BUILDINGS** Will Parker, Opus		

NOTE parallel session presentation times, including questions: Orals 15 min.

The Society gratefully acknowledges the principal sponsorship of the Earthquake Commission and all other sponsors

15.30 – 16.00	**Ground Floor and Level 1 Foyer**	**Afternoon Tea**		
16.00 – 18.00	**Session 4**	**4A: Innovation in Structural Engineering Projects** **Room: Auditorium** Chair: Kam Weng Yeun	**4B: Isolation** **Room: Renouf 2** Chair: Quincy Ma	**4C: Bridges** **(incl. Seismic Isolation on Bridges)** **Room: Lion Harbourview Lounge** Chair Alessandro Palermo
16.00 – 16.15		O4A.1 **BEYOND COMPLIANCE: SEEKING RISK MODELS BEYOND EVERYDAY STRUCTURAL ENGINEERING** Alistair Cattanach	O4B.1 **A NEW APPROACH IN A SEISMIC BASE ISOLATION AND DYNAMIC CONTROL OF STRUCTURES** Victor Kostarev	O4C.1 **QUANTIFYING RESILIENCE OF DAMAGE-RESISTANT TECHNOLOGIES: A MEANS OF ENHANCING NEW ZEALAND'S BRIDGES SEISMIC PERFORMANCE.** Ana Isabel Sarkis Fernandez
16.15 – 16.30		O4A.2 **SEISMIC DESIGN OF NEW ZEALAND INTERNATIONAL CONVENTION CENTRE** Weng Yuen Kam, Richard J Built	O4B.2 **STRENGTH DEGRADATION IN LEAD-RUBBER BEARINGS DURING A LONG-DURATION EARTHQUAKE** Tomotaka Wake	O4C.2 **EFFECT OF ECCENTRIC MOMENTS ON SEISMIC RATCHETING OF SINGLE-DEGREE-OF-FREEDOM STRUCTURES** Trevor Yeow
16.30 – 16.45		O4A.3 **WELLINGTON AIRWAYS CONTROL TOWER – STRUCTURAL DESIGN FOR RESILIENCE, CASE STUDY** Hamish McKenzie	O4B.3 **A COMPARATIVE STUDY ON SEISMIC ISOLATION APPLICATIONS IN TURKEY** Ugurhan Akyuz	O4C.3 **SEISMIC ASSESSMENT OF STATE HIGHWAY BRIDGES IN NEW ZEALAND - 19 YEARS LATER** Gopal Adhikari
16.45 – 17.00		O4A.4 **DESIGN FOR BUSINESS CONTINUITY REQUIREMENTS. CHALLENGES AND ADVANTAGES OF BASE ISOLATION ABOVE GROUND, A CASE STUDY** Sara Broglio	O4B.4 **INFLUENCE OF BASE DIAPHRAGM STIFFNESS ON SEISMIC LOADING OF HYBRID ISOLATION SYSTEMS** Keri Ryan	O4C.4 **CHALLENGES IN SEISMIC DESIGN OF INCREMENTALLY LAUNCHED BRIDGE OF NORTHERN MARMARA MOTORWAY, TURKEY** Etienne Combescure

NOTE parallel session presentation times, including questions: Orals 15 min.

The Society gratefully acknowledges the principal sponsorship of the Earthquake Commission and all other sponsors

17.00 – 17.15		O4A.5 **STRUCTURE AS ARCHITECTURE - A COLLABORATION TOWARDS A SHARED VISION** Steve Kemp, Katherine Skipper	O4B.5 **THE PERFORMANCE OF SEISMICALLY ISOLATED BUILDINGS DURING THE 2016 KUMAMOTO EARTHQUAKE** Keiko Morita	O4C.5 **COMPARING THE SEISMIC PERFORMANCE OF REINFORCED CONCRETE AND CONCRETE FILLED STEEL TUBE BRIDGE SYSTEMS USING PERFORMANCE BASED EARTHQUAKE ENGINEERING** Max Stephens
17.15 – 17.30		O4A.6 **DEVELOPMENT OF SEISMIC DESIGN PARAMETERS FOR THE MAARI WELLHEAD PLATFORM DECK** Varun Joshi, Tom Watson	O4B.6 **EFFECT OF NEAR-FAULT LONG-PERIOD GROUND MOTIONS ON SEISMIC RESPONSE OF BASE-ISOLATED STRUCTURES** Jun Ma	O4C.6 **IMPACT OF THE POST-EARTHQUAKE REPARABILITY OF LOW DAMAGE DISSIPATIVE CONTROLLED ROCKING CONNECTIONS ON THE DESIGN FRAMEWORK.** Brandon McHaffie
17.30 – 17.45		O4A.7 **REFURBISHMENT AND SEISMIC RETROFIT OF THE AURORA CENTRE USING FLUID VISCOUS DAMPERS – CASE STUDY, WELLINGTON** Hamish McKenzie	O4B.7 **STABILITY OF ELASTOMERIC ISOLATION SYSTEMS** I.G. Buckle	O4C.7 **PERFORMANCE IMPROVEMENT OF SEISMIC-ISOLATED BRIDGES NEAR ACTIVE FAULTS USING ELASTIC-GAP DEVICES** Murat Dicleli
17.45 – 18.00		O4A.8 **RE-TREADING THE RUBBER THAT HITS THE TECHNICAL ROAD** Henry Tatham	O4B.8 **HORIZONTAL BIAXIAL LOADING TESTS ON SLIDING LEAD RUBBER BEARING SYSTEM** Masashi Yamamoto	O4C.8 **PERFORMANCE TEST OF STEEL DAMPER AND ITS APPLICATIONS IN SEISMIC MITIGATION OF BRIDGES** Jianzhong LI
18.45 - Late	**Museum of New Zealand**	**Pre-Dinner Drinks** **NZSEE 2017 Awards Dinner** Please make your own way there		

NOTE parallel session presentation times, including questions: Orals 15 min.

The Society gratefully acknowledges the principal sponsorship of the Earthquake Commission and all other sponsors

	Te Papa Tongarewa			
Saturday 29 April				
08.00 – 17.00	**Michael Fowler Centre**	**Registration Open**		
08.30 – 09.15	**Auditorium**	**Keynote Address:** Chair: Stefano Pampanin K-03 **SEISMIC DESIGN OF BIG CITIES** Akira Wada		
09.15 – 09.20		**Move to next session**		
09.20 – 10.35	**Session 5**	**5A: Structure** **URM Assessment and Retrofit I** **Room: Auditorium** Chair: Dave Brunsdon	**5B: Lessons Learnt from Earthquakes** **Room: Renouf 2** Chair: Ken Elwood	**5C: Timber Structure - Next Frontier** **Room: Lion Harbourview Lounge** Chair: Pierre Quenneville
09.20 – 09.35		O5A.1 **SEISMIC STRENGTHENING TO CATEGORY 1 HERITAGE BUILDING – ST MARY OF THE ANGELS WELLINGTON** Anthony Taylor	O5B.1 **LEARNING FROM EARTHQUAKES: PAST; PRESENT; FUTURE** Peter Wood, Nick Horspool, Ken Elwood, David Brunsdon	O5C.1 **PRES-LAM IN THE US: THE SEISMIC DESIGN OF THE PEAVY BUILDING AT OREGON STATE UNIVERSITY** Francesco Sarti
09.35 – 09.50		O5A.2 **STRENGTHENING OF ST MARY OF THE ANGELS PARISH: LESSONS IN TEMPORARY WORKS ENGINEERING** Paul Brimer, Matt Pattinson	O5B.2 **STUDIES ON THE IMPROVEMENT OF EMERGENCY RISK EVALUATION SYSTEM -ACTUAL SITUATION OF THE SYSTEM OBSERVED FROM VOLUNTEER ACTIVITIES** Takashi Baba	O5C.2 **DEVELOPMENT AND FULL-SCALE VALIDATION OF RESILIENCE-BASED SEISMIC DESIGN OF TALL WOOD BUILDINGS: THE NHERI TALLWOOD PROJECT** Keri Ryan

NOTE parallel session presentation times, including questions: Orals 15 min.

The Society gratefully acknowledges the principal sponsorship of the Earthquake Commission and all other sponsors

09.50 – 10.05		O5A.3 **TERRACED HOUSE – PRACTICAL APPLICATION OF NZSEE PRINCIPLES IN THE NETHERLANDS** Craig Muir	O5B.3 **SEISMIC FRAGILITY ASSESSMENT OF CANTERBURY BUILDINGS** Timothy Blackbourn	O5C.3 **FRAMEWORK - A TALL RECENTERING MASS TIMBER BUILDING IN THE UNITED STATES** Reid B. Zimmerman, Eric McDonnell
10.05 – 10.20		O5A.4 **IMPLEMENTATION OF THE BUILDING (EARTHQUAKE PRONE BUILDINGS) AMENDMENT ACT 2016** John Gardiner	O5B.4 **EVACUATION OF INSTITUTIONAL BUILDINGS DURING A DISASTER IN DEVELOPING COUNTRIES: FROM PLANNING TO IMPLEMENTATION PHASE** Majid Ali	O5C.4 **EARTHQUAKE DAMAGE FOR SLOPING RESIDENTIAL SITES IN THE CANTERBURY EARTHQUAKES AND IMPLICATIONS FOR WELLINGTON** Geoff Thomas
10.20 – 10.35		O5A.5 **THE SEISMIC ASSESSMENT OF EXISTING BUILDINGS: THE INTERFACE BETWEEN TECHNICAL AND REGULATORY PROCESSES** Rob Jury, Dave Brunsdon	O5B.5 **STRUCTURAL DAMAGE AND LESSONS LEARNED FROM THE 2016 KUMAMOTO EARTHQUAKE** Mineo Takayama	O5C.5 **SEISMIC RESILIENT STRUCTURES WITH CROSS LAMINATED TIMBER (CLT) WALLS COUPLED WITH INNOVATIVE RESILIENT SLIP FRICTION (RSF) JOINTS** Ashkan Hashemi
10.35 – 11.05	**Ground Floor and Level 1 Foyer**	**Morning Tea**		
	Session 6	**6A: Structure** **URM Assessment and Retrofit II** **Room: Auditorium** Chair: Dmytro Dizhur	**6B: Rethinking Seismic Design Objective** **Room: Renouf 2** Chair: Will Parker	**6C: Non-structural Elements** **Room: Lion Harbourview Lounge** Chair Gregory MacRae

NOTE parallel session presentation times, including questions: Orals 15 min.

The Society gratefully acknowledges the principal sponsorship of the Earthquake Commission and all other sponsors

11.05 – 11.20		O6A.1 **EVALUATING DESIGN TECHNIQUES ON HERITAGE BUILDINGS USING A MULTI-CRITERIA FRAMEWORK** David Partington	O6B.1 **PERFORMANCE OF CONCRETE BUILDINGS IN THE 2016 KUMAMOTO EARTHQUAKE – CAN NZ LEARN FROM OTHERS** Helen Ferner	O6C.1 **IMPROVING NON-STRUCTURAL SEISMIC COMPLIANCE WITH BIM** Jason Howden, Brad Sara
11.20 – 11.35		O6A.2 **EXEMPLAR SEISMIC RETROFITS OF CHRISTCHURCH URM BUILDINGS** Shannon Abeling	O6B.2 **CREATING A MORE RESILIENT BUILT ENVIRONMENT FOR NEW ZEALAND** Pam Johnston	O6C.2 **EXPERIMENTAL STUDIES OF A TYPICAL SPRINKLER PIPING SYSTEM IN HOSPITALS** Zhen-Yu Lin
11.35 – 11.50		O6A.3 **TIMBER STRONG-BACKS AS COST-EFFECTIVE SEISMIC RETROFIT METHOD FOR URM BUILDINGS** Dmytro Dizhur	O6B.3 **PERFORMANCE VERSUS COMPLIANCE OF BUILDINGS IN THE SEISMIC CONTEXT** Andrew Stirrat, Rob Jury	O6C.3 **WHICH BUILDING COMPONENTS CAUSED INJURIES IN RECENT NEW ZEALAND EARTHQUAKES?** Andrew Baird
11.50 – 12.05		O6A.4 **OUT-OF-PLANE ADOBE WALL VENEER PERFORMANCE FROM A NOVEL QUASI-STATIC AND DYNAMIC TILT TEST** Hugh Morris	O6B.4 **A PRACTITIONER'S APPROACH TO COMMUNICATING DAMAGE CONTROL PERFORMANCE** Jared Keen	O6C.4 **INVESTIGATION OF MODELLING METHODS FOR BUILDINGS WITH NON-STRUCTURAL ELEMENTS** Cameron Kerr, Dylan Proudfoot
12.05 – 12.20		O6A.5 **EFFECT OF CHOICE OF INHERENT DAMPING MODELS ON RELIABILITY OF INCREMENTAL DYNAMIC ANALYSIS** Athol Carr	O6B.5 **DISCUSSION SESSION** All presenters	O6C.5 **VERTICAL SPECTRAL DEMANDS ON BUILDING ELEMENTS INDUCED BY EARTHQUAKE EXCITATION** Tom Francis, Benjamin Hendry

NOTE parallel session presentation times, including questions: Orals 15 min.

The Society gratefully acknowledges the principal sponsorship of the Earthquake Commission and all other sponsors

12.20 – 13.15	**Ground Floor and Level 1 Foyer**	**Lunch**
12.20 – 13.15	**Lion Harbourview**	**Lunchtime Workshop** **JAPAN SEISMIC STRUCTURAL DESIGN WITH SQUARE HOLLOW SECTION COLUMN MESSAGE FROM TOHOKU EARTHQUAKE IN 2011** Hiro Futamura, Nippon Steel & Sumikin Metal Products (NSMP)
13.15 – 15.15	**Auditorium**	**Resilient Communities** Chair: David Brunsdon PL3.1 **COMMUNITY RESILIENCE AND THE U.S. RESILIENCY COUNCIL'S BUILDING RATING SYSTEM** Ron Mayes, Simpson Gumpertz & Heger PL3.2 **WELLINGTON RESILIENCE PLANNING** Mike Mendonça, Wellington City Council PL3.3 **ORGANISATION RESIIENCE: WHAT IS IT AND WHY IT MATTER?** John Vargo, Resilient Organisations PL3.4 **RESILIENT COMMUNITIES** Peter Townsend, Canterbury Employers' Chamber of Commerce PL3.5 **UNDERSTANDING THE SOCIAL ASPECTS OF RESILIENT COMMUNITIES** David Johnston, GNS PL3.6 **CREDIBILITY, COMPLIANCE AND CURIOSITY: A REGULATOR PERSPECTIVE ON RESILIENCE** Mike Stannard, MBIE
15.15 – 15.30		**NZSEE 2017 Conference Awards and Closure**
15.30 – 16.00	**Ground Floor and Level 1 Foyer**	**Afternoon Tea**

NOTE parallel session presentation times, including questions: Orals 15 min.

The Society gratefully acknowledges the principal sponsorship of the Earthquake Commission and all other sponsors