

## CURRICULUM VITAE

# ANDREW W. CHARLESON

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- Date of Birth:** 2 December 1946
- Qualifications:** BE (Civil) Hons, ME (Civil)(with Distinction)  
*University of Canterbury, New Zealand*
- Affiliations:** Member of the Institution of Professional Engineers of New Zealand;  
Fellow of the NZ Society for Earthquake Engineering;  
Member of the NZ Timber Design Society;  
Member of the NZ Concrete Society;  
Member of the NZ Structural Engineering Society
- Experience:**
- 2011-1987:***  
Associate Professor and Senior Lecturer, School of Architecture, Victoria University of Wellington. Teaching Building Structures to 3<sup>rd</sup>, 4<sup>th</sup> and 5<sup>th</sup> year students and contributor to 4<sup>th</sup> and 5<sup>th</sup> year architectural design studios.
- Since 1997, Director of the Earthquake Hazard Centre, a NGO assisting developing countries with seismic damage mitigation. This work involves extensive international networking and the production of a quarterly newsletter sent to forty-three seismically prone developing countries.
- 1983-1986:***  
Structural Design Engineer, Head Office, Ministry of Works and Development, NZ.  
Experience included: Project leader for a wide range of structural engineering projects requiring feasibility studies, sketch plan design and full working drawing design with contract documentation.
- 1981-1983:***  
Earthquake engineering advisor to the Indonesian Government as part of a NZ Bilateral Aid Scheme. Based at the Building Research Institute, Bandung, Indonesia. Assisted with the completion of a new Indonesian earthquake loadings code by

providing technical and administrative input. Lectured in a large number of courses for university lecturers, practising engineers and students in order to promote and teach the correct use of the new code. The Indonesian language was used.

**1977-1981:**

Design Engineer, Structural Design Office, Wellington District Office, Ministry of Works and Development.

Design and supervision of a wide range of buildings from single to multi-storey construction. Materials used included timber, steel, precast concrete, tilt-up reinforced concrete panels and reinforced concrete.

**Awards**

Victoria University of Wellington Teaching Excellence Award 2004.

National Tertiary Teaching Excellence Award 2005 for Excellence in Innovation.

Best Supervisor Award, Faculty of Architecture and Design, awarded by the Victoria University of Wellington Postgraduate Students' Association, 2009.

Best Lecturer Award, Faculty of Architecture and Design, awarded by the Victoria University of Wellington Postgraduate Students' Association, 2010.

**List of Publications:**

**Book Chapters and Books**

Charleson, A.W. (ed.) 1991. *Guidelines for the Use of Structural Precast Concrete in Buildings*. Centre for Advanced Engineering, Christchurch. 174 pp.

Charleson, A. W. Chapter 8 Structures, in Burns, J. (Ed.), 1997. *Technology in the New Zealand curriculum: perspectives on practice*, Dunmore Press Ltd, Palmerston North.

Taylor, M., Preston, J. and Charleson, A., *Moments of Resistance*, Archadia Press, Sydney, 2002, 101 pp.

Charleson, A. W., *Structure as Architecture: a Sourcebook for Architects and Engineers*, Architectural Press, Oxford, 2005, 226 pp. (As at 1-2011 this book has been translated and published in Spanish, Mandarin, Korean, Persian and Portuguese.)

Charleson, A. W. (ed.) *Architectural design for earthquake: a*

guide to the design of non-structural elements. New Zealand Society for Earthquake Engineering, 2007, 94 pp.

Bier H. and Charleson A. W., (2007) Structural Form, Chapter in *Timber Design Guide*, NZ Timber Industry Federation, Wellington.

Charleson, A. W., *Seismic design for architects: outwitting the quake*, Architectural Press, Oxford, Sept. 2008, 280 pp.

Charleson, A. W. 2010. *Earthquake reinforcement for earthen houses with straps cut from used tyres*. World Housing Encyclopedia, 50 pp.

### Other Publications

Blakeley, R.W.G., Charleson, A.W. and others. Recommendations for the Design and Construction of Base Isolated Structures. *Bulletin of the NZ Society for Earthquake Engineering*, Vol.12, No.2, June 1979, pp. 136-157.

Charleson, A.W. and Frost, K.D. Testing of a Connection between Steel and Glulam using Epoxied Dowels. *NZ Journal of Timber Construction*, Vol.7, No.1, 1991, pp. 14-16.

Charleson, A.W. Mitigation of Earthquake Damage to Household Chattels and Light Office Equipment. Proceedings of Pacific Conference of Earthquake Engineering, Auckland, Nov. 1991, pp. 281-290.

Charleson, A.W. and Cooper, L. Survey of the Condition of Glue-Laminated Structural Members in Existing Buildings. *New Zealand Timber Design Journal*, Issue 3, Vol.1, 1992, pp.15-18.

Charleson, A.W. Innovation with Glulam Timber. *New Zealand Timber Design Journal*, Vol. 1, No. 2, 1992, p. 20.

Charleson, A.W. Vertical Lateral Load Resisting Elements for Low to Medium-rise Buildings - Information for Architects. *Bulletin of the New Zealand National Society for Earthquake Engineering*, Vol. 26, No.3, September 1993, pp. 356-366.

Charleson, A.W. 1993. *Wind and Earthquake Load Resisting Structure for Buildings. Design guides for architects*. Centre for Building Performance Research, Victoria University of Wellington, New Zealand, pp. 45.

Charleson, A.W. and Patience, D.B. Review of Current Structural Timber Jointing Methods - an Architectural

Perspective. *NZ Timber Design Journal*, Vol. 2, No. 3, 1993, pp. 5-12.

Charleson, A.W. Cast-in-place Excellence. *NZ Concrete Construction*, Feb/March 1994, pp. 20-24.

Charleson, A.W. Loads of Looks - a Celebration of Structure. *Architecture New Zealand*, May/June 1994, pp. 108-110.

Charleson, A.W. European Exposed Concrete Developments. *NZ Concrete Construction*. Oct/Nov 1994, pp. 7-11.

Charleson, A.W. Contrasts in Timber Design - a Review of Two European Timber Structures. *NZ Timber Design Journal*. Vol. 3, No. 1. 1994, pp. 6-8.

Charleson, A.W. Unexpected Delight- a Review of Two European Interior Timber Structures. *NZ Timber Design Journal*, Vol. 4, No. 1, 1995, pp. 14-17.

Charleson, A.W. Architectural Design of Earthquake and Wind Resisting Structure. *Architectural Science Review*, Vol. 38, No. 4, 1995, pp. 177-180.

Charleson, A.W. Seismic Restraint of Building Contents. *Bulletin of the New Zealand National Society for Earthquake Engineering*, Vol. 28, No.2, 1995, pp. 113-117.

Charleson, A.W. Seismic Design Within Architectural Education. *Proceedings of Pacific Conference on Earthquake Engineering*, Melbourne, Nov. 1995, pp. 43-48 and reprinted in *Bulletin of the New Zealand National Society for Earthquake Engineering*, Vol. 30. No. 1, 1997, 46-50.

Charleson, A. W. Brisbane Makes Splendid Use of Concrete. *NZ Concrete Construction*, Vol. 39, No. 6, 1995, pp. 22-24.

Brunsdon, D.R., Charleson, A. W. et al, Post-earthquake Co-ordination of Technical Resources: the Need for a Unified Approach. *Bulletin of the New Zealand National Society for Earthquake Engineering*, Vol. 29, No.4, 1996, pp. 280-283.

Charleson, A.W. Study Group on Post-earthquake Response of Engineers. *Proceedings of New Zealand National Society for Earthquake Engineering Conference, Wairakei*, March 1997, pp. 74-81.

Charleson, A.W. Andrew Charleson Reflects on Last Year=s NZ Concrete Society Conference, *Architecture New Zealand*, March/April 1997, pp. 86-87.

- Charleson, A.W. Concrete Potential, *Architecture New Zealand*, May/June 1997, pp. 83-86.
- Charleson, A. W. Repairing Concrete, *Architecture New Zealand*, July/August 1997, pp. 108-111.
- Charleson, A. W. Guest Editorial, *Journal of the NZ Structural Engineering Society*, Vol.10, No. 1, June 1997, p. 5.
- Charleson, A. W. and Taylor, M. Architectural Implications of Seismic Strengthening Schemes, *Proceedings of the Conference of Structural Studies Repairs and Maintenance of Historic Buildings*, Spain, July 1997, pp. 477-486.
- Charleson, A. W., Case Study: Small and Beautiful - Timber Structure at Domestic Scale, *New Zealand Timber Design Journal*, Vol. 6, No. 3, 1997, pp. 10-11.
- Charleson, A. W. and Calder, D., Developments in Japanese Timber Architecture, *New Zealand Timber Design Journal*, Vol. 6, No.4, 1997, pp. 9-18.
- Charleson, A. W. Aesthetics of Architectural Structural Detailing. *Structural Engineering International, Journal of the International Association for Bridge and Structural Engineering (IABSE)*, Zurich, Vol. 7 No. 4, 1997, pp. 297-302.
- Charleson, A.W. Disseminating Seismic Design Information to Developing Countries - the Earthquake Hazard Centre, *Proceedings of the NZ National Society for Earthquake Engineering Conference*, Wairakei, March 1998, pp. 145-147.
- Charleson, A. W. and Brundson, D., Post-earthquake Response - the Society's Position, *Proceedings of the NZ National Society for Earthquake Engineering Conference*, Wairakei, March 1998, pp. 33-34.
- Charleson, A. W. et al, 1998, *Post-earthquake Building Safety Evaluation procedures: Preparedness Checklist and Response Plan*, New Zealand National Society for Earthquake Engineering, 24 pp. and also published in the *Bulletin of the New Zealand National Society for Earthquake Engineering*, Vol. 31, No. 2, June 1998, pp. 103-121.
- Charleson, A. W., Aesthetics of Architectural Structure and Services Integration, *Proceedings of the 32<sup>nd</sup> Annual Conference of the Australia and New Zealand Architectural Science Association*, 15-17 July 1998, Wellington, pp. 145-150.

Charleston, A. W., The Contribution of Structure to Architecture, *Proceedings of the Australasian Structural Engineering Conference, 30 Sept - 2 Oct 1998, Auckland*, pp. 65- 69.

Charleston, A. W., The Importance of Structural Detailing in Seismic Resistant Construction, *Proceedings of the Eleventh Symposium on Earthquake Engineering, 17-19 December 1998, Roorkee, India*, pp. 373-379.

Charleston, A. W., Innovative structural timber design in architecture, *Proceedings of Pacific Timber Engineering Conference, Rotorua, 14-18 March 1999*, pp. 20-25.

Van de Vorstenbosch, G. W. and Charleston, A. W., A Survey of Seismically Isolated Buildings in New Zealand, *Proceedings of the New Zealand Society for Earthquake Engineering Technical Conference, Rotorua, 19-21 March, 1999*, pp. 72-75.

Charleston, A. W. et al, Observations of the Demonstration Project for Seismic Hazard Prevention and Reduction in Fujian Province, China, *Proceedings of the New Zealand Society for Earthquake Engineering Technical Conference, Rotorua, 19-21 March, 1999*, pp. 128-131.

Charleston, A. W., Preston, J. and Taylor, M., (Ir)resistable moments on a fault line, *Proceedings of the 1999 ACSA West Regional Meeting, Eugene, Oregon, 15-16 October 1999*, pp. 163-169.

Charleston A. W. and Taylor M., Towards an Earthquake Architecture, *Proceedings 12<sup>th</sup> World Conference on Earthquake Engineering January 2000*, NZ National Society for Earthquake Engineering, Paper 0858, 8p.

Taylor, M., Preston, J. and Charleston, A., Seismic Resistance: Heritage, Architecture and the Post-colonial, *Proceedings of the Second Australasian Conference on Engineering Heritage, 2000*, Institution of Professional Engineers, Wellington, pp. 217-222.

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Taylor, M., Preston, J. and Charleston, A., The Myth of the Matter: Parallel Surfaces of Seismic Linings, Chapter 19 in *Re-framing architecture: theory, science and myth*, eds. Ostwald M. J. and Moore, R. J., Arcadia Press, Sydney, 2000.

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Design: a State-of-the-art Summary and Resource of Contemporary International Practice, *Proceedings of the World Conference on Timber Engineering, Vancouver, July 31-August 3, 2000*, pp.522-528.

Preston, J., Taylor, M. and Charleson, A., Matters of Architecture and Gravity, *Proceedings 2000 ASCA West Regional Meeting, Arizona State University, October 26-28*, pp. 77-84.

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Charleson, A. and Gjerde, M., Innovation and Excellence: a Review of Recent World Architectural Concrete, *Proceedings of the New Zealand Concrete Society Conference, 2001*, pp. 150-155.

Charleson, A. and D'Ayalya, Review of Seismic Strengthening Guidelines for R.C. Buildings in Developing Countries, *12<sup>th</sup> European Conference on Earthquake Engineering*, Paper ref. 820, Sept. 2002, 8 pp.

Charleson, A., Beyond Utility (Part 1), *New Zealand Timber Design Journal*, Issue 1 Vol. 11, April 2002, pp. 3-10.

Charleson, A., Beyond Utility (Part 2), *New Zealand Timber Design Journal*, Issue 3, Vol. 11, September 2002, pp. 9-16.

Charleson, A., Concrete Architecture - Roles of Exposed Structural Elements, *Proceedings of the New Zealand Concrete Society Conference, October 2002*, 8pp.

Gjerde, M. and Charleson, A., The Aesthetics of Recent

Concrete Architecture, *Proceedings of the first FIB Congress 2002, Concrete Structures in the 21<sup>st</sup> Century*, Session 14.

Baird, G., Wood, P., and Charleson, A., Learning Stratagems: Integration of Architectural Design with Building Services and Structures, *Proceedings of the ANZAScA 2002 Conference, Deakin University*, November 2002, Vol. 1, pp.43-50.

Van de Vorstenbosch, G., Charleson, A. and Dowrick, D., Reinforced Concrete Building Performance in the Mw 7.8 1931 Hawke's Bay, New Zealand, Earthquake, *Bulletin of the New Zealand Society for Earthquake Engineering*, 35:3, September 2002, pp. 149-164.

Charleson, A, Cook, B. and Bowering, G., Assessing and Increasing the Level of Earthquake Preparedness in New Zealand Homes, *Proceedings of the Pacific Conference on Earthquake Engineering*, February 2003, Paper 137.

Charleson, A. W., Strengthening the link between earthquake engineering and architecture, Paper No. 4, *Proceedings of the conference of the NZ Society for Earthquake Engineering, 19-21 March 2004, 8pp.*

Charleson, A. W., Contemporary innovative European timber structures: nine case-studies, *Proceedings of the Timber Design Seminar, NZ Timber Design Society*, 21 April, 2004, 9pp.

Charleson, A. W. and Taylor, M., Earthquake architecture explorations, Paper 596, 13<sup>th</sup> World Conference on Earthquake Engineering, Vancouver, August 2004, 9 pp.

Charleson, A. W., Innovation and diversity in contemporary European timber architecture, *Proceedings of Timber in Architecture: fostering design and innovation with wood, Forest Research*, 28-30 August 2004, 7 pp.

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Reich, E. and Charleson, A. W., Potential seismic resistant design strategies from other fields, *Proceedings of the conference of the NZ Society for Earthquake Engineering, 11-13 March 2005, 8pp.*

Charleson, A. W. and French, M. A., Improving seismic safety of adobe construction with used car-tyre strips: preliminary investigations, *Proceedings of the conference of the NZ Society for Earthquake Engineering, 11-13 March 2005, 10 pp.*



Charleston, A. W. Earthquake engineering education and empowerment of architecture and civil engineering students, *Proceedings of the 8<sup>th</sup> U.S. National Conference on Earthquake Engineering*, April 18-22, 2006, San Francisco, 10 pp.

Charleston, A. W., Low-cost tension resistance to improve seismic safety of adobe construction: strips cut from used car tyres, *Proceedings of the 8<sup>th</sup> U.S. National Conference on Earthquake Engineering*, April 18-22, 2006, San Francisco, California, 10 pp.

Charleston, A. W., Reflections on aspects of New Zealand's seismic resilience: comparisons with Californian practice, *Proceedings of the conference of the NZ Society for Earthquake Engineering*, March 2008, 10 pp.

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Charleston, A. W. and Perez, N. Long-span Timber Buildings – a Review of Recent International Projects, *New Zealand Timber Design Journal*, Vol. 17, No. 4, 2009, pp. 19-28.

Charleston, A. W. Initiatives to reduce the seismic vulnerability of world housing: the World Housing Encyclopedia. NSF CMMI Engineering and Research and Innovation Conference, June 22-25, 2009, Honolulu, Hawaii. Plenary Session 3, 6 pp.

Sutjiadi, H.Y., Charleston, A. W. and Baird, G. 2010. The

structural design of a double-layer space structure for a 100-storey building. Proceedings of the Conference on High Rise Towers and Tall Buildings, Munich, April 14-16.

Nordin, J. and Charleson, A. W. 2009. Tsunami responsive architecture: sustainability of the houses and inhabited structures along the coast of Malaysia. Proceedings of the 4<sup>th</sup> Annual International Workshop and Expo on the Sumatra Tsunami Disaster and Recovery (AIWEST-DR), pp. 20-24.

Sutjiadi, H. Y. and Charleson, A. W. 2011. Vertical double-layer space structures in super-tall buildings. Taller, Longer, Lighter, IABSE-IASS Symposium, London, Sept. 20-23, 8 pp.

Charleson, A. W and Blondet, M. 2010. Seismic reinforcement for adobe houses using straps cut from used car tires. *Earthquake Spectra*. Accepted for publication June 2011.

Charleson, A. W. 2011. Seismic safety policy in New Zealand, International conference on post-disaster reconstruction: GSDMA, 12-16 April 2011, Ahmedabad, India.

Charleson, A. W. 2011. Teaching structures to architectural students. Second International Conference on Architecture & Structure, 15-16 May 2011, University of Tehran, Tehran.

Charleson, A. W. 2011. Earthquake engineering – conceptual design issues. Third National Conference on Spatial Structures, 17-18 May 2011, University of Tehran, Tehran.

Charleson, A. W. Capacity Building for Seismic Risk Reduction in Developing Countries. The 9th US National and 10th Canadian Conference on Earthquake Engineering, July 25-29, Toronto. Paper 1365.