

University of Auckland
Standard
ACADEMIC CV



THE UNIVERSITY OF AUCKLAND
NEW ZEALAND



NAME: Jason Maxwell Ingham

POST NOMINALS: BE (Hons), ME (Dist), PhD *Cal.*, GradDipBus, MBA
M.IPENZ (Structural), M.ASCE

DATE / PLACE OF BIRTH: 19 April 1967, Masterton, New Zealand

CHILDREN: Markos Errol Ingham, born 21 December, 1998

CURRENT POSITION: Associate Professor, Deputy HOD (Research)

DEPARTMENT: Civil and Environmental Engineering

FACULTY: Engineering

PREVIOUS APPOINTMENTS: Senior Lecturer, 2/2003-10/2005
CCANZ Fellow, The University of Auckland, 7/1995-2/2003

CONTACT DETAILS:

Work:

Department of Civil and Environmental Engineering
The University of Auckland
Private Bag 92019
Auckland Mail Centre, Auckland 1142
New Zealand

Home:

23 Springvale Drive
Fairview Heights
North Shore City 0632

Ph: +64 9 478 0404

Ph +64 9 373 7599 X87803
Fax: +64 9 373 7462
Email: j.ingham@auckland.ac.nz

EDUCATIONAL QUALIFICATIONS: [Tertiary only]

Engineering:

1995. PhD (Structural Engineering), University of California at San Diego
1991. ME (Distinction), Civil Engineering, The University of Auckland
1989. BE (Honours), Civil Engineering, The University of Auckland

Business:

2005. MBA, The University of Auckland
2002. GradDipBus (Administration), The University of Auckland

SIGNIFICANT DISTINCTIONS / AWARDS:

2011. John B. Scalzi Research Award, The Masonry Society (USA)
2011. TMS Journal Outstanding Paper Award, The Masonry Society (USA)
2011. Best Equal Oral Presentation, 9th Pacific Conference on Earthquake Engineering
2011. IPENZ Fulton-Downer Gold Medal – The President's Award (co-recipient)
2009. Merit Award for Teaching, Faculty of Engineering, The University of Auckland
2009. New Zealand Concrete Society (NZCS) Sandy Cormack Award for best conference paper
2009. H.W.H. (Timber) West Best Paper Award, 11th Canadian Masonry Symposium

2008. Merit Award for Teaching, Faculty of Engineering, The University of Auckland
 2008. Alan H. Yorkdale Memorial Award, American Society for the Testing of Materials (ASTM)
 2007. Merit Award for Teaching, Faculty of Engineering, The University of Auckland
 2007. TMS Best Thesis Award (as supervisor of Dr Kok Choon Voon), The Masonry Society (USA)
 2006. New Zealand Concrete Society (NZCS) Sandy Cormack Award for best conference paper
 2006. TMS Best Thesis Award (as supervisor of Dr Gavin Wight), The Masonry Society (USA)
 2004. Boston Consulting Group Integrated Strategy Award, The University of Auckland
 2004. Faculty Teaching Award, Faculty of Engineering, The University of Auckland
 2003. TMS Journal Outstanding Paper Award, The Masonry Society (USA)
 2003. Finalist, Young Engineer of the Year, Institute of Professional Engineers New Zealand (IPENZ)
 2001. Early Career Research Excellence Award, The University of Auckland
 2001. Think Tank Member, Knowledge Wave Conference, The University of Auckland
 2000. Alan H. Yorkdale Memorial Award, American Society for the Testing of Materials (ASTM)
 1998. Merit Award for Teaching, Faculty of Engineering, The University of Auckland
 1994. Postgraduate Student Award, 11th Annual International Bridge Conference, Pittsburgh, Pennsylvania
 1990. Fowlds Memorial Prize in Engineering, The University of Auckland
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KEYNOTE AND INVITED ADDRESSES

2012. **INGHAM, J. M.** 'Seismic assessment and retrofit of heritage unreinforced clay brick buildings', *15th International brick and block masonry conference (15IB²Mac)*, Florianópolis, Brazil, May 13-16.
2011. **INGHAM, J. M.** 'Performance of masonry buildings during the 2010/2011 Canterbury earthquake swarm', The Australian Earthquake Engineering Conference, Barossa Valley, South Australia, Nov. 18-20
2011. **INGHAM, J. M.** 'The destruction and planned rebuilding of the coastal city of Christchurch, NZ, after the Canterbury earthquakes', The 13th Annual Meeting of China Association for Science and Technology, Tianjin, China, Sept. 21-22.
2011. **INGHAM, J. M.** 'Performance of masonry buildings during the 2010/2011 Canterbury earthquake swarm', The Eleventh North American Masonry Conference, Minneapolis, Minnesota, USA, June 5-8.
2011. **INGHAM, J. M.** 'Building performance in the 2010/2011 Canterbury earthquake swarm', Semi-Plenary lecture, CompDyn 2011 '3rd International Conference on Computational Methods in Structural Dynamics & Earthquake Engineering, Corfu, Greece, May 25-28.
2011. **INGHAM, J. M.** 'The response of masonry structures in the M_w 6.3 Christchurch earthquake on February 22, 2011', *The 11th International Rose School Seminar – Special Session on the 2011 Christchurch and Tohoku Earthquakes*, Collegio Internazionale per la Protezione Civile Cardinale Agostino Riboldi, Pavia, Italy, May 19.
2010. **INGHAM, J. M.**, WOTHERSPOON, L., HOGAN, L. RAGUED, B. 'Damage to concrete structures from the 2010 Darfield (Canterbury, NZ) earthquake', *Korea Concrete Institute Fall Convention*, Elysian, Gangchon, Korea, Nov. 5-6.
2010. **INGHAM, J. M.** 'Seismic Retrofit of Structures – Experiences in New Zealand', *Seismic Retrofit of Structures Conference*, Santiago, Chile, May 19-20.
2009. **INGHAM, J. M.** 'NZNEES: Addressing New Zealand's Remoteness from its International Earthquake Engineering Collaborators', *2009 Annual Conference of the Network for Earthquake Engineering Simulation (NEES)*, Honolulu, Hawaii, USA, June 23-25.
2008. **INGHAM, J. M.** 'The Influence of Earthquakes on New Zealand Masonry Construction Practice', *14th International Brick and Block Masonry Conference (14IB²Mac)*, Sydney, Australia, February 17-20.
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INVITED EDITOR or INVITED ARTICLES

2011. ADAM, J., **INGHAM, J. M.** (Eds.), Special issue on Structural Failures in Earthquakes', *Journal of Engineering failure Analysis*.
2011. DIZHUR, D., DERAKHSHAN., H., GRIFFITH, M. C., **INGHAM, J. M.** 'In-Situ Testing of a Low Intervention NSM Seismic Strengthening Technique for Historical URM Buildings',

International Journal of Materials and Structural Integrity (IJMSI) 5, 2/3, 168-191.

<http://dx.doi.org/10.1504/IJMSI.2011.041933>

2010. GRIFFITH, M. C., INGHAM, J. M., WELLER, R. 'Earthquake reconnaissance: Forensic engineering on a urban scale', *Australian Journal of Structural Engineering*, 11, 1, 63-74.
2007. WIGHT, G., INGHAM, J. M., WILTON, A. 'Innovative seismic design of post-tensioned concrete masonry house', Invited paper, *Special Issue on Masonry, Canadian Journal of Civil Engineering*, 34, 11, November, ISSN 1208-6029, 1393-1402.

INVITED PARTICIPANT

2010. Thomson Reuters / Times Higher Education Academic Reputation Survey for World University Rankings.
2009. Member of Expert Engineering Team assembled by the Australia-Indonesia Facility for Disaster Reduction, to develop recommendations following the 30th September 2009 M7.6 Padang Earthquake, Indonesia.
2007. Special panel session on "Issues of earthquake engineering for regions of moderate seismicity, and experiences that can be learnt from regions of strong seismicity", *2007 Asian-Pacific Network of Centers for Earthquake Engineering Research*, Hong Kong, China, March 29-30.

PROFESSIONAL SOCIETIES AND COMMITTEES:

Executive Level:

- 2009- Management Committee, New Zealand Society for Earthquake Engineering
- Chairman, 2010 NZSEE Conference, Wellington
 - Co-convenor, 2011 9th PCEE Conference, Auckland
- 2006 Committee, NZS 4229 'Concrete Masonry Buildings not requiring Specific Design'
- 2005-2011 NZ Representative, I.Struct.E Research Panel
- 2003-2005 Panelist, Earthquake Commission Research Foundation
- 2001-2008 Corresponding Member, Masonry Standards Joint Committee (USA)
- 2001-2006 Committee, NZS 4230 'The Design of Masonry Structures'
- 2000-2003, 2009-2010 Structural Engineering Society of New Zealand
- Secretary 2000-2003
- 1997-2003 Executive Officer, New Zealand Concrete Masonry Association
- 1997-1998, 2001-2003, 2008- Council, New Zealand Concrete Society
- Vice President 2009-2010
 - President 2011-2012
- 1997-1998 NZ Regional Secretary, Concrete Pipe Association of Australasia
- 1997, 1999 Industry Officer, New Zealand Master Concrete Placers Association
- 1996-2006 Committee, IPENZ Auckland Structural Group

Member Level:

- 2002-2009 Member, Institute of Professional Engineers of New Zealand (IPENZ) [#190077]
- 2002-2009 Member, American Society of Civil Engineers [#398201]
- 2002-2009 Member, American Concrete Institute [#044515]
- 2003-2006 Chartered Professional Engineer, IPENZ
- 1997-2009 Member, Structural Engineering Society of New Zealand (SESOC)
- 1996-2009 Member, New Zealand Society for Earthquake Engineering (NZSEE)
- 1996-2009 Member, New Zealand Concrete Society

CONFERENCE ORGANISING COMMITTEES:

2012. 15th World Conference on Earthquake Engineering, Scientific Committee, Lisbon, Portugal, 24-28 Sept.
2011. Chairman, The New Zealand Concrete Industry Conference 2011, Rotorua, 8 August.
2011. 11th North American Masonry Conference, Technical Committee, Minneapolis, Minnesota, USA, 5-8 June.
2011. Co-Convenor, 9th Pacific Conference on Earthquake Engineering, Auckland, 14-16 April.
2011. Chairman, 9th Australasian Masonry Conference, Queenstown, 15-18 February.

2010. Chairman, The New Zealand Concrete Industry Conference 10, Wellington, 7-9 October.
2010. 8th International Masonry Conference, International Technical Committee, Dresden, Germany, 4-7 July.
2010. Chairman, 2010 NZSEE Annual Conference, Wellington, 26-28 March.
2009. Chairman, Symposium on Sustainable Concrete and Cement Technologies, University of Auckland, 14 December.
2009. The New Zealand Concrete Industry Conference 09, Organising Committee, Rotorua, 8-10 October.
2009. NEES 7th Annual Meeting, Organising Committee, Honolulu, Hawaii, 23-25 June.
2008. 14th World Conference on Earthquake Engineering, International Working Group, Beijing, China, 12-17 October.
2008. 14th International Brick and Block Masonry Conference (14IBMAC), International Technical Program Committee, Sydney, Australia, 17-20 February.
2007. ACIC 07, Advanced Composites in Construction, International Science Committee, University of Bath, Bath, UK, 2-4 April.
2005. New Zealand Concrete Industries Conference, Organising Committee, Sky City Convention Centre, Auckland, 22-24 September.
2005. ConMat '05, Third International Conference on Construction Materials – Performance, Innovations, and Structural Implications, International Advisory Committee, Vancouver, Canada, 22-24 August.
2004. 7th Australasian Masonry Conference, Technical Review Committee, Newcastle, Australia, 13-16 July.
2004. The New Zealand Concrete Industry Conference, Organising Committee, Queenstown, 16-19 Sept.
2001. New Zealand Masonry Trades and New Zealand Concrete Masonry Association Annual Conference, Organising Committee, Novotel Tainui, Hamilton, 6-8 Sept.
2000. New Zealand Masonry Trades and New Zealand Concrete Masonry Association Annual Conference, Organising Committee, Quality Inn Hotel, Palmerston North, 14-16 Sept.
2000. 12th World Conference on Earthquake Engineering, Organising Committee, Aotea Centre and Auckland Town Hall, Auckland, 30 Jan. - 4 Feb., 2000.
1999. New Zealand Masonry Trades and New Zealand Concrete Masonry Association Annual Conference, Organising Committee, The Grand Chancellor Hotel, Christchurch, 10-12 Sept.
1998. Combined Concrete Industries Conference, Organising Committee, Wellington Festival & Convention Centre, 8-10 Oct.
1997. Third CANMET/ACI International Symposium on Advances in Concrete Technology, Organising Committee, Sheraton Hotel, Auckland, 25-27 Aug.

PROFESSIONAL REFEREE OR REVIEWER:

Journals

Advances in Structural Engineering (2006x2, 2007, 2008x2, 2010, 2011x2)
 Australasian Journal of Engineering Education (2010)
 Bulletin, New Zealand Society for Earthquake Engineering (1998, 2005, 2006)
 Canadian Journal of Civil Engineering (2002, 2005, 2006, 2008)
 Earthquake Spectra (2010)
 Engineering Failure Analysis (2010x2)
 Engineering Structures (2008, 2009, 2010x4, 2011x4)
 International Journal of Earthquake Engineering and Structural Dynamics (2006, 2007)
 International Journal of Pavement Engineering (2006)
 Journal, Structural Engineering Society of New Zealand (1999, 2001)
 Journal of Construction and Building Materials (2011)
 Journal of Earthquake Engineering (2009, 2010)
 Journal of Materials in Civil Engineering (2011)
 Journal of Structural Engineering (2002, 2006x2, 2007x3, 2008, 2009x4, 2010x3, 2011x3)
 Korean Society of Civil Engineering (KSCE) Journal of Civil Engineering (2010)
 Kuwait Journal of Science and Engineering (2010, 2011)
 Masonry International Journal (2006)
 Structural Journal, American Concrete Institute (2002, 2003, 2004, 2005x3, 2006x2)

Research Proposals

Australian Research Council (ARC) College of Experts, Discovery Projects Scheme (2005, 2006)
 Earthquake Commission Research Foundation Research Panel Member (2004, 2006)

National Sciences and Engineering Research Council of Canada, Discovery Grant (2007, 2009)
 National Science Foundation (USA), NEESR (2009)
 Qatar National Research Fund, 3rd cycle of National Priorities Research Program (2010)
 Technology Foundation STW (Netherlands Organisation for Scientific Research) (2009)
 Swiss National Science Foundation (SNSF) Div. Mathematics, Natural Sciences and Engineering
 (2009, 2011)

Academic Quality Evaluation

South Africa National Research Foundation (2009)
 National Sciences and Engineering Research Council of Canada, E.W.R. Steacie Memorial
 Fellowship (2009)

COMMUNITY SERVICE:

2000-2003 Executive Member (2003=Chairman), UNITEC Childcare Inc. Board of Trustees
 2000 Mentor to three students completing CREST Awards, Rangitoto College

FACULTY/DEPARTMENTAL SERVICE:

2007-2010 University Administration Review Committee (ARC) (Chair: Prof. Bryce Hool)
 2009- Faculty of Medical and Health Science, Faculty Staffing Committee (FSC)
 2008-2009 Faculty of Engineering, Faculty Staffing Committee (FSC)
 2007-2009 Faculty of Business and Economics, Faculty Staffing Committee (FSC)
 2004 Faculty Professional Development Taskforce
 2004 Faculty Sustainability in Engineering Taskforce
 2001-2002, 2008-2009 Faculty of Engineering, Faculty Research Committee
 2001 Invited attendee, Faculty Strategic Planning Activity
 2000-2001 Coordinator, Year 1 Student Induction

2001-2008 Invited member, Departmental Industry Advisory Board
 2000-2005 Departmental Undergraduate Enrolment Coordinator
 2000 Departmental Representative, Freshers Welcome
 2000 Back-up Departmental Postgraduate Enrolment Coordinator
 1999-2001 Member (2000=Convenor), Faculty Student Affairs Committee
 1999 Departmental Representative, '99 Building Expo
 1998, 2000-2009 Departmental Spokesperson to Part 1 students
 1997-2000 Patron, Auckland University Engineering Society
 1997-2000 Departmental Representative, Coca-Cola Careers Expo
 1996-2001 Year 3 Civil Staff/Student Liaison
 1996-2000 Convenor, Departmental Social Committee
 1996, 2000, 2003, 2005-2006, 2009 Open Day/Enginuity Day Representative

TEACHING[†]:

2006-2011 ENGGEN 150 - Advanced Mechanics and Mathematical Modelling (part only)
 2001-2011 ENGGEN 121 (Summer semester) - Engineering Mechanics (part only)
 1998-2011 ENGGEN 121 (First semester) - Engineering Mechanics (part only)
 1999-2002, 2004 CIVIL 451 - Timber Engineering (part only)
 1998 655.712 - Structural Design (part only)
 1998 CIVIL 312 - Structural Design 1 (part only)
 1997-2001 CIVIL 461 (formerly 52.372) - Highway and Transportation Design (part only)
 1997-1999 758.500 - Architecture Structural Elective (part only)
 1996-2004 CIVIL 411 (formerly 52.363) - Structural Design 3 (part only)
 1995-2007, 2010 (ex. 2002) CIVIL 313 (formerly 52.261) - Structural Design 2 (part only)
 1995-2001 CIVIL 250 (formerly 52.112) - Civil Engineering Materials (part only)
 1995-1998 52.365 - Structural Concrete Theory (part only)

[†] Sabbatical taken second semester 2002 and second semester 2006

RESEARCH SUPERVISION:

Year	Doctoral dissertation		Masters dissertation		Bachelors and M.Eng.St		PG and UG International Visitors	
	Annual	Cumulative	Annual	Cumulative	Annuals	Cumulative	Annual	Cumulative
1996	0	0	0	0	2	2	0	0
1997	0	0	0	0	5	7	0	0
1998	0	0	0	0	7	14	0	0
1999	0	0	0	0	1	15	0	0
2000	0	0	2	2	1	16	0	0
2001	0	0	1	3	1	17	0	0
2002	1	1	0	3	2	19	1	1
2003	0	1	0	3	2	21	0	1
2004	0	1	1	4	1	22	1	2
2005	1	2	1	5	2	24	0	2
2006	1	3	0	5	2	26	0	2
2007	1	4	1	6	5	31	2	4
2008	0	4	0	6	9	40	0	4
2009	0	4	1	7	6	46	3	7
2010	1	5	0	7	6	52	2	9
2011							14	23
2012								

Post-doctoral Fellows:

2005-2006. Mohamed ElGawady

PhD Students (Principal Supervisor):

2013. M. Ikmal F. Rozli,

2013. Nasser Almesfer,

2012. Najif Ismail, Seismic retrofit of unreinforced masonry buildings (began May 2008)

- Pakistan Higher Education Commission (HEC) Scholar

2012. Dymtro Dizhur, In-field Seismic Retrofit of Unreinforced Masonry Buildings using Fibre Reinforced Polymer Materials (began April 2008)

- University of Auckland Doctoral Scholar
- 2009 H.W.H. (Timber) West Best Paper Award, 11th Canadian Masonry Symposium

2012. Charlotte Knox, Seismic Assessment and Retrofit of Unreinforced Masonry Frames (began March 2008)

- University of Auckland Doctoral Scholar

2012. Moustafa Al-Ani, Design of Prestressed Concrete Bridges to Resist Shear (began March 2008)

- University of Auckland Doctoral Scholar
- 2008 New Zealand Concrete Society Travel Bursary
- New Zealand Postgraduate Study Abroad Award (2008)

2012. Rhys Rogers, Decision Tool for Identification of Prestressing Corrosion in Concrete Bridges (began March 2008)

2012. Aaron Wilson, In-field seismic assessment and retrofit of unreinforced masonry buildings (began March 2007)

- University of Auckland Doctoral Scholar
- Top Achiever Doctoral Scholar
- NZSEE Research Scholarship 2007
- Fulbright Scholar
- 1st place, APAN26 KAREN Student Innovation Competition, Queenstown, 2008

2012. Ronald Lumantarna, Material Properties of NZ Unreinforced Masonry Buildings (began April 2008)
- University of Auckland Doctoral Scholar
2011. Hamid Mahmood, Seismic Retrofit of Unreinforced Masonry Buildings using Fibre Reinforced Polymers (FRP) (began July 2006)
- Faculty of Engineering International Doctoral Fees Bursary
 - Building Research Postgraduate Scholarship Award (2009)
 - Pakistan Higher Education Commission (HEC) PhD Scholarship (2010)
2011. Nicholas Brooke, Improving the performance of reinforced beam-column joints designed for seismic resistance
- University of Auckland Doctoral Scholar
 - Annual Beca Postgraduate Poster Competition (2004)
 - NZSEE best student conference paper award (2004)
 - NZCS Sandy Cormack Award for best conference paper (2006)
2011. Richard Henry, [Self-centering precast concrete walls for buildings in regions with low to moderate seismicity](#), Doctoral dissertation, University of Auckland, Auckland, New Zealand, June, 441p.
- University of Auckland Doctoral Scholar
 - Top Achiever Doctoral Scholar
 - Fulbright Scholar
 - 2nd place, APAN26 KAREN Student Innovation Competition, Queenstown, 2008
 - Best Equal Oral Presentation, 9th Pacific Conference on Earthquake Engineering, 2011
2011. Hossein Derakhshan, [Seismic assessment of out-of-plane loaded unreinforced masonry walls](#), Doctoral dissertation, University of Auckland, Auckland, New Zealand, February, 341p. <http://hdl.handle.net/2292/6576>
- 2009 H.W.H. (Timber) West Best Paper Award, 11th Canadian Masonry Symposium
2010. Alistair Russell, [Characterisation and Seismic Assessment of Unreinforced Masonry Buildings](#), Doctoral dissertation, University of Auckland, Auckland, New Zealand, October, 344p. <http://hdl.handle.net/2292/6038>
- New Zealand Postgraduate Study Abroad Award (2007)
2007. Kok Choon Voon, [In-Plane Seismic Design of Concrete Masonry Structures](#), Doctoral dissertation, University of Auckland, Auckland, New Zealand, July, 213p. <http://researchspace.auckland.ac.nz/handle/2292/580>
- Best Thesis Award, The Masonry Society (2007)
 - Alan H. Yorkdale Memorial Award, American Society for the Testing of Materials (ASTM), (2008)
2006. Gavin Wight, [Seismic Performance of a Post-Tensioned Concrete Masonry Wall System](#), Doctoral dissertation, University of Auckland, Auckland, New Zealand, June, 439p., <http://researchspace.auckland.ac.nz/handle/2292/362>
- Fulbright Scholar
 - Todd Foundation Scholar
 - University of Auckland Doctoral Scholar
 - Best Thesis Award, The Masonry Society (2006)
 - University of Auckland Best Doctoral Thesis Award (2007)
2005. Nicholas To, [Nonlinear Structural Analysis using Strut-and-Tie Models](#), Doctoral dissertation, University of Auckland, Auckland, New Zealand, March, 233p, <http://researchspace.auckland.ac.nz/handle/2292/1952>
2002. Peter Laursen, [Seismic Analysis and Design of Post-tensioned Concrete Masonry Walls](#), Doctoral dissertation, University of Auckland, Auckland, New Zealand, June, 439p., <http://researchspace.auckland.ac.nz/handle/2292/3330>
- Alan H. Yorkdale Memorial Award, American Society for the Testing of Materials (ASTM), (2000)
 - University of Auckland Best Doctoral Thesis Award (2003)

ME Students (Principal Supervisor):

2011. Max Fowler,
2009. Wentao Zhang, Application of Recycled Concrete Aggregate in the Production of Concrete in New Zealand Ready-Mix Concrete Plant
2007. Christopher John Haigh, Latex and Acrylic Based Waste Paint as Admixture in Concrete Masonry Blockfill, 125p. <http://hdl.handle.net/2292/2501>

- 2005. Isaac Kett, Identifying an Effective Binder for the Stabilisation of Allophanic Soil
- 2004. Anselmo Bai, Assessing the Seismic Performance of Reinforcement Coupler Systems
- 2001. Yang Lin, Capacity of Shear Studs embedded in Lightweight Polystyrene Concrete Diaphragms
- 2000. Youhua Yang, Manufacturing Reactive Powder Concrete using Common New Zealand Materials
- 2000. Darrin Liddel, Influence of Loading History on Ultimate Displacement of Concrete Structures

M.Eng.St Students:

- 2002. Tony Hii, Further investigation of Reactive Powder Concrete in New Zealand
- 1999. Zhong Yi, Ultimate Compression Strain of Prestressed Concrete Masonry
- 1998. Robert McKinnon, The Predicted Force-Displacement Response of Unbonded Post-Tensioned Masonry Walls as found from Visual Basic Programs
- 1997. Nameer A. Matti, Concrete Confinement using Metal Fibres
- 1997. Henao Badira, Seismic Performance of Reinforced Concrete Exterior Beam-Column Joints (assistant supervision with R. Fenwick)

B.E Project Students:

- 2010. Matthew Cutfield, Bond Criteria for Grade 600 Reinforcement
- 2010. Sarah Neil, The Viability of High Strength Steel Reinforcement for Concrete Structures in New Zealand
- 2010. Paulo Naititi, Reduced Scale Shake Table Testing of Out-of-plane URM walls
- 2010. James Hatrick-Smith, Testing of Scale Models of Unreinforced Masonry Buildings
- 2010. Pia Abercromby and Michael Wheaton, Detailed Seismic Assessment of Unreinforced Masonry Buildings
- 2010. Ali Omran and Waleed Numan, Material Testing of Unreinforced Masonry
- 2009. Sumit Anand, Finite Element Modelling of the Loop Bar Detail
- 2009. Jedediah Martin, Push Over - An Artistic Vision of Concrete Construction
- 2009. Bilel Ragued, Strength Evaluation of Existing Concrete Bridges using Field Testing- Part A: Scenario Studies
- 2009. Nasser Almesfer, Strength Evaluation of Existing Concrete Bridges - Part B
- 2009. Sylvie Myers, Suppression of the alkali silica reaction in mortars containing glass aggregates
- 2009. Judeena Carpenter, The alkali silica reaction in Glasscrete™ mortar bars
- 2008. Megan Schlotjes, The Development of Glasscrete Mix Designs
- 2008. Ryan Fleming, Ground motion records for time-history analysis in the South Island of New Zealand
- 2008. Russell James Green, The Screening of Unreinforced Masonry Buildings
- 2008. Matthew David Willacy, The Detailed Seismic Assessment of URM Buildings
- 2008. Huan-Rong Yu (Anderson), URM mortar compression strength
- 2008. Yi-Wei Lin, URM brick compression strength distribution and prism strength predictive equation
- 2008. Hsen-Han Hkoo, Thermal, Economic and Environmental Assessment of an Uku House
- 2008. David Raymond Fehsenfeld, Comparison of ductility capacity of Earth Structures
- 2008. Timoti Neil Hopkins, Glasscrete as a Viable Residential Floor
- 2007. John Cheuh, Material Testing of Flax-fibre Reinforced Rammed Earth
- 2007. Rohann da Silva, Seismic Analysis and Design of a Cement Stabilised Harakeke Reinforced Rammed Earth Structure
- 2007. Laura Devcich, The Economic and Environmental Assessment of Two Construction Types using Lifecycle Analysis
- 2007. John O'Hagen, Developing Onsite Assessment and Testing Techniques for Unreinforced Masonry Buildings in New Zealand
- 2007. Luke Clark, Developing a database of material properties from laboratory testing for unreinforced masonry in New Zealand
- 2006. Hamish Gray, Establishing the Material Properties of Unreinforced Masonry Buildings in New Zealand
- 2006. Hannah Schofield, The Impact of Design Codes and Materials on the History of Construction Practices in New Zealand
- 2005. Alistair Russell, Retrofit of Inadequately Reinforced Concrete Beam-Column Joints: Part A
- 2005. Chris Speed, Retrofit of Inadequately Reinforced Concrete Beam-Column Joints: Part B
- 2004. Chris Mancini, Structural Testing of Partially Filled Masonry Walls with Openings
- 2003. Tyson Giles, The Seismic Response of Rigid Blocks
- 2003. Michael Henry Diviwelagi, The Determination of Totara Structural Properties and Analysis of UNITEC Institute of Technology Wharenui (assistant supervision with K. Morgan)

2002. Kerry Wood, The use and effect of polycarboxylate super plasticisers on self-compacting concrete
2001. Gavin Wight, Testing of Post-tensioned Concrete Masonry Walls
2000. Scott Cairney, Manufacturing Reactive Powder Concrete
1998. Darrin Liddel, In-Plane Seismic Design of Prestressed Concrete Masonry
1998. Tim Chang, Steel Fibre Reinforced Concrete Behaviour
1998. Koravic Nualkhair, Sulphide Corrosion of Concrete Sewer Pipes
1998. Dennis C. C. Tou, Analytical Strain Distributions in Unbonded Prestressed Concrete Masonry Walls
1998. Kok Choon Voon, Creep of Prestressed Concrete Masonry
1998. Wayne. Y. W. Chang, Concrete Cylinders and its Constituents Test
1997. Chris Avery, The Predicted In-plane Response of Unbonded Post-Tensioned Masonry
1997. Brian Mackay, Losses in New Zealand Post-Tensioned Prestressed Masonry
1997. Brian Mackay, The Seismic Performance of 150 Series Concrete Masonry
1996. Paul A. Koppens, Investigation into the Potential Uses of Pinatubo Lahar
1996. Alexander J. H. Sivyser, Strut and Tie Analysis of an Exterior Beam Column Joint

Hosted Foreign Exchange Students (PhD):

2011. Will Cyrier, from Washington State University, USA
2011. Chaminda Konthesingha, from University of Newcastle, Australia
2011. Joao Leite, from Minho University, Portugal
2011. Jose Centeno, from University of British Columbia, Vancouver, Canada
2011. Ilaria Senaldi, from University of Pavia, Italy
2011. Jocelyn Dickie, from University of Calgary, Canada
2011. Lisa Moon, from University of Adelaide, Australia
2009. Byeong Jo Kim, from Chonnam National University, Gwangju, South Korea
2007. Derek Skolnik, from University of California at Los Angeles, USA
2004. Tim Gudmand-Høyer, from 'Technical University of Denmark', Lyngby, Denmark

Hosted Foreign Exchange Students (BE/ME):

2011. Aurelien Credo, from Centre d'étude supérieur de l'industrie (CESI), Angoulême, France
2011. Florine Rimeur, from Centre d'étude supérieur de l'industrie (CESI), Angoulême, France
2011. Jeremie Baudet, from Centre d'étude supérieur de l'industrie (CESI), Angoulême, France
2011. Thibaut Willeman, from Ecole Nationale Supérieure de Techniques Avancées (ENSTA), Paris, France
2011. Vincent Regnier, from Institut National des Sciences Appliquées de Strasbourg, Strasbourg, France
2011. Anatole Weill, from Ecole Nationale Supérieure de Techniques Avancées (ENSTA), Paris, France
2011. Benoit Rozier, from Ecole Nationale des Travaux Publics de l'Etat (ENTPE), Vaulx-en-Velin, Lyon, France
2010. Luc Defauchaux, from École Nationale Supérieure de Techniques Avancées (ENSTA), Paris, France
2010. Fabien Scemama, from École Nationale Supérieure de Techniques Avancées (ENSTA), Paris, France
2009. Jefferson Hang, from the University of California at San Diego, USA
2009. Guido Van Kalsbeek, from École Nationale Supérieure de Techniques Avancées (ENSTA), Paris, France
2007. Boris Marquois, from 'Institut National des Sciences Appliquées de Rennes', Rennes, France.
2002. Benoit Seidlitz, from 'Institut National des Sciences Appliquées de Lyon', Lyon, France.

HOSTED SABBATICAL ACADEMICS

2011. David Biggs, Biggs Consulting, DM.ASCE, New York, USA
2010. Assoc. Prof. Kenneth Elwood, The University of British Columbia, Vancouver, Canada
2008. Prof. Kwang Ho Choi, Namseoul University, Korea
2008. Sang Yeon Kim, HURI (Korea National Housing Corporation), Seoul, Korea
2006. Assoc. Prof. Sri Sritharan, Iowa State University, USA
2004. Prof. Reza Kianoush, Ryerson University, Canada.
-

EXTERNAL EXAMINER:*Doctoral Examinations:*

2009. SINGH, B. K. 'Development of interlocking block masonry system and an experimental investigation on its behaviour under uniaxial repeated loading', Doctoral dissertation, Department of Civil Engineering, Indian Institute of Technology, Delhi, India.
2006. ABDUL HAMID, N. H. 'Seismic Damage Avoidance Design of Warehouse Buildings Constructed using Precast Hollow Core Panels', Doctoral thesis, Department of Civil Engineering, University of Christchurch.
2004. WILLIS, C., 'Design of Unreinforced Masonry Walls for Out-of-plane Loading', Doctoral thesis, School of Civil and Environmental Engineering, The University of Adelaide.
2003. DONG, P., 'Effects of varying Hysteresis Models and Damage Models on Seismic Structural Damage Assessment of Reinforced Concrete Ductile Framed Structures', Doctoral thesis, Department of Civil Engineering, University of Christchurch.

Chair of Doctoral Examinations:

2010. ADAMS, K. N. 'Improving prediction of streamflow response to spatially-distributed vegetation change: Exploring computer simulation', Doctor of Philosophy in Geography, University of Auckland
2010. MUSTAFFA, Z. B. 'Subsidiaries' Dual Network Embeddedness: Explaining Vertical and Horizontal Knowledge Outflows of MNC Subsidiaries, Doctor of Philosophy in International Business, University of Auckland
2009. HENDERSON, S. 'How do people manage their documents? An empirical investigation into personal document management practices among knowledge workers', Doctor of Philosophy in Information Systems, University of Auckland, August 4.
2008. COSTAIN, G. 'Cognitive Support during Object-Oriented Software Development: The Case of UML Diagrams', Doctor of Philosophy in Information Systems, University of Auckland, April 29.
2007. AKROYD, C. 'An Empirical Study of Management Controls in Product Development', Doctor of Philosophy in Accounting and Finance, University of Auckland, May 23.

Member of Examinations Committee:

2010. BODENSIEK, F. 'Development and behaviour of a new long-span composite floor system', Doctor of Philosophy in Civil Engineering, University of Auckland.

Masters Examinations:

2010. DAYARAM, K. 'The recarbonation of crushed concrete from a New Zealand perspective', Master of Science in Chemistry, University of Canterbury.
2009. GREEN, S. M. F. 'High Performance Lightweight Pumice Aggregate Concrete', Master of Engineering thesis, Department of Civil and Environmental Engineering, The University of Auckland.
2008. GOODWIN, C. O. 'Architectural Considerations in the Seismic Retrofit of Unreinforced Masonry Heritage Buildings in New Zealand', Master of Architecture thesis, Department of Architecture and Planning, The University of Auckland, <http://researchspace.auckland.ac.nz/handle/2292/5701>.
2006. QI, Y., 'Strengthening of unreinforced masonry walls using FRP techniques under out-of-plane loading', Master of Engineering Science thesis, School of Civil and Environmental Engineering, The University of Adelaide.

PROFESSIONAL SEMINARS:

2011. BUCHANAN, A., MORRIS, H., **INGHAM, J. M.**, PAMPANIN, S. 'Building Performance in the February 2011 Christchurch Earthquake', Six venues nationwide, Apr 19 – Mar 11.
2011. PENDER, M. J., CLIFTON, C., **INGHAM, J. M.** 'Seismic Assessment and Improvement of Buildings and Foundations', Seven venues nationwide, Feb 4 – Mar 29.
2004. BARNARD, D., **INGHAM, J. M.** 'Design of Reinforced Concrete Masonry Structures', Seven venues nationwide (NZ), Oct 4 - Nov 9.
2003. WIGHT, G., KOWALSKY, M., **INGHAM, J. M.** 'Shake Table Testing of Post-tensioned Concrete Masonry Walls', *American Concrete Institute Fall Convention, Boston*, Sept 27-Oct. 1.

2002. **INGHAM, J. M.** 'Strut and Tie Design of Concrete Structures', University of Auckland Short Course.
2001. **INGHAM, J. M.**, COOK, D., and CATO, R. 'Specific Design of Concrete Ground Floors', Five venues nationwide (NZ), Oct 24 – Nov 1.
2000. **INGHAM, J. M.**, GJERDE, M., WILTON, A. 'NZS 4229 Seminar' Six venues nation-wide (NZ), March 15-31.
2000. **INGHAM, J. M.**, RESTREPO, J. I. 'Introduction to the strut-and-tie method of analysis and design' Auckland, Feb 24.
1999. KOTZE, R., **INGHAM, J. M.**, and proprietary speakers. 'Industrial Concrete Ground Floor Design' Five venues nationwide (NZ), Nov. 17-24.
1999. **INGHAM, J. M.**, GJERDE, M., WILTON, A. 'NZS 4229 Seminar', Five venues nationwide (NZ), Nov. 1-10.
1997. **INGHAM, J. M.**, Strut and Tie Design, for IPENZ Auckland Structural Group, June 17.

RESEARCH PUBLICATIONS (ResearcherID A-4960-2010, Scopus Author ID 7005507536):

Year	Web of Science search			Scopus search			Journal articles		Conference articles	
	Results	Citations (per item)	H Index	Results	Citations (per item)	H index	Annual total	Cumulative total	Annual total	Cumulative total
1991	0	0 (-)		0	0 (-)		0	0	1	1
1992	0	0 (-)		0	0 (-)		0	0	1	2
1993	0	0 (-)		0	0 (-)		0	0	1	3
1994	1	0 (0)		0	0 (-)		0	0	2	5
1995	1	0 (0)		0	0 (-)		0	0	1	6
1996	1	0 (0)		0	0 (-)		0	0	4	10
1997	1	0 (0)		1	0 (-)		1	1	2	12
1998	1	0 (0)		2	1 (0.50)	1	2	3	3	15
1999	1	0 (0)		2	3 (1.50))	1	2	5	2	17
2000	1	0 (0)		2	5 (2.50)	2	0	5	8	25
2001	2	0 (0)		4	6 (1.50)	2	6	11	7	32
2002	3	0 (0)		6	9 (1.50)	2	3	14	8	40
2003	5	0 (0)		8	14 (1.75)	3	3	17	3	43
2004	7	0 (0)		11	14 (1.27)	3	3	20	10	53
2005	7	3 (0.43)	1	11	18 (1.64)	3	1	21	7	60
2006	11	4 (0.36)	1	16	22 (1.47)	3	7	28	16	76
2007	15	14 (0.93)	2	20	35 (1.84)	4	4	32	10	86
2008	17	26 (1.53)	3	22	46 (2.09)	4	3	35	21	107
2009	20	32 (1.68)	4	24	56 (2.33)	5	3	38	18	125
2010	23	38 (1.65)	4	30	67 (2.23)	5	11	49	23	148
2011	25	42 (1.68)	4	35	87 (2.49)	6				

Books/Monographs/Symposia

2011. **INGHAM, J. M.**, DHANASEKAR, M., and MASIA, M. (editors). 'Proceedings of the 9th Australasian Masonry Conference', 15-18 February, Queenstown, New Zealand, 603p.

**Refereed Journal Articles:
Planned**

2011. ISMAIL, N., MAHMOOD, H., DIZHUR, D., LIN, Y., **INGHAM, J. M.** 'Performance based design procedures for seismic retrofitting of unreinforced masonry walls', *SESOC Journal*.
2011. ISMAIL, N., MAHMOOD, H., DIZHUR, D., LIN, Y., **INGHAM, J. M.** 'Retrofit of existing New Zealand unreinforced masonry building stock using selected seismic retrofit solutions', *NZSEE Bulletin*.
2010. ISMAIL, N., **INGHAM, J. M.** 'Performance of unreinforced masonry walls seismically retrofitted using textile reinforced mortars', *ASCE Journal of Structural Engineering*.
- 200X. MAHMOOD, H., **INGHAM, J. M.** 'Cyclic in-plane testing of FRP-retrofitted unreinforced masonry elements', *ASCE Journal of Composites for Construction*.
2011. BROOKE, N., **INGHAM, J. M.** 'Parametric derivation of seismic design criteria for reinforcement anchorages at interior R/C beam-column joints', *ASCE Journal of Structural Engineering*.
2011. BROOKE, N., **INGHAM, J. M.** 'Earthquake resistant fibre reinforced concrete beam-column joints', *Journal of Advanced Concrete Technology*.
2011. BROOKE, N., **INGHAM, J. M.** 'The potential for use of advanced fibre reinforced cementitious composites in New Zealand structures', *Journal of the Structural Engineering Society of New Zealand*.
- 20xx. RUSSELL, A. P., ELWOOD, K. J. , (et al.?), **INGHAM, J. M.**, 'Seismic assessment procedure for unreinforced masonry buildings', *Earthquake Spectra* (submit 2011?)
2011. RUSSELL, A. P., DIZHUR, D., **INGHAM, J. M.** 'Diagonal compression testing of laboratory-built and in-situ unreinforced masonry wall panels', *ASCE Journal of Materials in Civil Engineering* (submit May 2010)

Submitted

2012. ISMAIL, N., **INGHAM, J. M.** 'Cyclic out-of-plane behaviour of slender masonry walls seismically strengthened using posttensioning', *ASCE Journal of Structural Engineering*.
2012. LUMANTARNA, R., BIGGS, D. T., **INGHAM, J. M.** 'Uniaxial compressive strength and stiffness of field extracted and laboratory constructed masonry prisms', *ASCE Journal of Materials in Civil Engineering, ISSN 0899-1561* (submitted 21 July 2011)
2012. LUMANTARNA, R., BIGGS, D. T., **INGHAM, J. M.** 'Compressive, flexural bond and shear bond strengths of in-situ unreinforced clay brick masonry', *ASCE Journal of Materials in Civil Engineering, ISSN 0899-1561* (submitted 29 June 2011)
2012. RUSSELL, A. P., ELWOOD, K. J., **INGHAM, J. M.** 'General force-displacement response of URM walls with flanges'. *ASCE Journal of Structural Engineering* (submit Feb 2011, STENG-1527)
2011. RUSSELL, A. P., and **INGHAM, J. M.** 'Characterisation of New Zealand's Unreinforced Masonry Building Stock', *Earthquake Spectra*, xx(xx), xx-yy
2011. DERAKHSHAN, H., DIZHUR, D., GRIFFITH, M. C., **INGHAM, J. M.** 'In-field airbag testing of unreinforced masonry walls', *ASCE Journal of Structural Engineering* (submitted August 2010).

Accepted

2011. DERAKHSHAN, H., GRIFFITH, M. C., **INGHAM, J. M.** 'Airbag testing of unreinforced masonry walls subjected to one-way bending', *ASCE Journal of Structural Engineering* (submitted May 2010).
2011. ALMESFER, N., HAIGH, C., **INGHAM, J. M.** 'Waste paint as admixture in concrete masonry blockfill', *Cement and Concrete Composites* (resubmitted June 2011)
2011. DERAKHSHAN, H., GRIFFITH, M. C., **INGHAM, J. M.** 'Out-of-plane behaviour of one-way spanning URM walls', *ASCE Journal of Engineering Mechanics* (submitted May 2010, accepted Oct 2010).
2011. HENRY, R. S., SRITHARAN, S., **INGHAM, J. M.** 'Unbounded tendon stresses in post-tensioned concrete walls at nominal flexural strength', *ACI Structural Journal* (ID S-2010-019, submitted January 2010).
2011. HENRY, R. S., BROOKE, N., SRITHARAN, S., **INGHAM, J. M.** 'Defining the concrete compressive strain in unbonded post-tensioned walls', *ACI Structural Journal* (submitted March 2010, resubmitted Aug 2010).
2011. OYARZO-VERA, C., McVERRY, G. H., **INGHAM, J. M.** 'Seismic Zonation and Default Suite of Ground Motion Records for Time-History Analysis in the North Island of New Zealand', *Earthquake Spectra* (081510EQS105M submitted August 2010).

International Journal Publications

2011. ISMAIL, N. PETERSEN, R., MASIA, M. J., **INGHAM, J. M.**, Diagonal shear behaviour of unreinforced masonry wallets strengthened using twisted steel bars', *Journal of Construction and Building Materials*, 25, 12, 4386-4393.
<http://dx.doi.org/10.1016/j.conbuildmat.2011.04.063>
2011. MAHMOOD, H., **INGHAM, J. M.** 'Diagonal Compression Testing of FRP-retrofitted Unreinforced Clay Brick Masonry Wallettes', *ASCE Journal of Composites for Construction*, Journal of Composites for Construction [http://dx.doi.org/10.1061/\(ASCE\)CC.1943-5614.0000209](http://dx.doi.org/10.1061/(ASCE)CC.1943-5614.0000209) Posted ahead of print 11 February 2011.
2011. DIZHUR, D., DERAKHSHAN., H., GRIFFITH, M. C., **INGHAM, J. M.** 'In-Situ Testing of a Low Intervention NSM Seismic Strengthening Technique for Historical URM Buildings', *International Journal of Materials and Structural Integrity (IJMSI)* 5, 2/3, 168-191.
<http://dx.doi.org/10.1504/IJMSI.2011.041933>
2011. MAHMOOD, H., **INGHAM, J. M.** 'Seismic Vulnerability Assessment of Pakistan Unreinforced Masonry Buildings at a National Scale', *Seismological Research Letters*, 82, 5, 676-685.
<http://dx.doi.org/10.1785/gssrl.82.5.663>
2011. GREEN, S. M. F., BROOKE, N. J., McSAVENEY, L. J., **INGHAM, J. M.** 'Mixture design development and performance verification of structural lightweight pumice aggregate concrete', *ASCE Journal of Materials in Civil Engineering*, ISSN 0899-1561, 23, 8, 1211-1219. [http://dx.doi.org/10.1061/\(ASCE\)MT.1943-5533.0000280](http://dx.doi.org/10.1061/(ASCE)MT.1943-5533.0000280)
2011. EGBELAKIN, T. K.; WILKINSON, S., POTANGAROA, R., **INGHAM, J. M.** 'Challenges to successful seismic retrofit implementation: a socio-behavioural perspective', *Building Research & Information*, 39, 3, 286-300. <http://dx.doi.org/10.1080/09613218.2011.552264>
2011. ELGAWADY, M., MA, Q., BUTTERWORTH, J. W., **INGHAM, J. M.** 'Effects of Interface Material on the Performance of Free Rocking Blocks', *Journal of Earthquake Engineering and Structural Dynamics*, ISSN: 1096-9845, 40, 4, 375-392. <http://dx.doi.org/10.1002/eqe.1025>
2011. **INGHAM, J. M.**, BIGGS, D. T., MOON, L. M. 'How did unreinforced masonry buildings perform in the February 2011 Christchurch earthquake', *The Structural Engineer*, ISSN 1466-5123, 89, 6, March, 14-18.
2011. ISMAIL, N., LAZZARINI, D. L., LAURSEN, P. T., **INGHAM, J. M.** 'Seismic performance of face loaded unreinforced masonry walls retrofitted using unbounded post-tensioning', *Australian Journal of Structural Engineering*, 11, 3, 243-252.
2011. **INGHAM, J. M.**, GRIFFITH, M. C. 'Performance of unreinforced masonry buildings during the 2010 Darfield (Christchurch, NZ) earthquake', *Australian Journal of Structural Engineering*, 11, 3, 207-224.
2011. **INGHAM, J. M.**, GRIFFITH, M. C. 'Damage to unreinforced masonry structures by seismic activity' *The Structural Engineer*, ISSN 1466-5123, 89, 3, February, 14-15.
2010. DAVIS, C. L., McLEAN, D. I, **INGHAM, J. M.** 'Evaluation of design provisions for in-plane shear in masonry walls', *Journal of The Masonry Society*, ISSN: 0741-1294, 28, 2, 41-59.
2010. GRIFFITH, M. C., **INGHAM, J. M.**, WELLER, R. 'Earthquake reconnaissance: Forensic engineering on an urban scale', *Australian Journal of Structural Engineering*, 11, 1, 63-74.
2010. KETT, I, **INGHAM, J. M.**, Evans, J. 'Identifying an effective binder for the stabilisation of allophanic soils', *International Journal of Pavement Engineering*, 11, 3, June, 223-236.
<http://dx.doi.org/10.1080/10298430903033347>
2010. ZHANG, W., **INGHAM, J. M.** 'Using recycled aggregates in New Zealand ready-mix concrete production', *ASCE Journal of Materials in Civil Engineering*, ISSN 0899-1561, 22, 5, May, 443-450. [http://dx.doi.org/10.1061/\(ASCE\)MT.1943-5533.0000044](http://dx.doi.org/10.1061/(ASCE)MT.1943-5533.0000044)
2010. HENRY, R. S., AALETI, S., SRITHARAN, S., **INGHAM, J. M.** 'Concept and finite element modeling of new steel shear connectors for self-centering wall systems', *ASCE Journal of Engineering Mechanics*, ISSN 0733-9399, 136, 2, February, 220-229.
[http://dx.doi.org/10.1061/\(ASCE\)EM.1943-7889.0000071](http://dx.doi.org/10.1061/(ASCE)EM.1943-7889.0000071)
2009. TO, N. H. T., SRITHARAN, S., **INGHAM, J. M.** 'Strut-and-Tie Nonlinear Analysis of Concrete Frames' *ASCE Journal of Structural Engineering*, ISSN 0733-9445, 135, 10, October, 1259-1268. [http://dx.doi.org/10.1061/\(ASCE\)0733-9445\(2009\)135:10\(1259\)](http://dx.doi.org/10.1061/(ASCE)0733-9445(2009)135:10(1259))
2009. **INGHAM, J. M.**, BAI, A. 'Seismic assessment of a spiral thread reinforcement connection system', *Magazine of Concrete Research*, ISSN 0024-9831 61, 7, September, 529-537.
<http://dx.doi.org/10.1680/macr.2008.00098>
2008. **INGHAM, J. M.**, WIGHT, G., VOON, K. C. 'In-plane Seismic Response of Reinforced Concrete Masonry Shrinkage Control Joints', *Journal of The Masonry Society*, ISSN: 0741-1294, 26, 1, July, 67-75. <http://www.masonrysociety.org/journalfiles/10072.pdf>
2008. WIGHT, G. D., **INGHAM, J. M.** 'Tendon stress in unbonded posttensioned masonry walls at nominal in-plane strength', *ASCE Journal of Structural Engineering*, ISSN 0733-9445, 134, 6, June, 938-946. [http://dx.doi.org/10.1061/\(ASCE\)0733-9445\(2008\)134:6\(938\)](http://dx.doi.org/10.1061/(ASCE)0733-9445(2008)134:6(938))

2008. VOON, K. C., **INGHAM, J. M.** 'Experimental In-plane shear strength investigation of reinforced concrete masonry walls with openings', *ASCE Journal of Structural Engineering*, ISSN 0733-9445, 134, 5, May, 758-768. [http://dx.doi.org/10.1061/\(ASCE\)0733-9445\(2008\)134:5\(758\)](http://dx.doi.org/10.1061/(ASCE)0733-9445(2008)134:5(758))
2007. WIGHT, G., **INGHAM, J. M.**, WILTON, A. 'Innovative seismic design of post-tensioned concrete masonry house', Invited paper, *Special Issue on Masonry, Canadian Journal of Civil Engineering*, 34, 11, November, ISSN 1208-6029, 1393-1402. <http://dx.doi.org/10.1139/L07-104>
2007. WIGHT, G. D., KOWALSKY, M. J., **INGHAM, J. M.** 'Shake Table Testing of Posttensioned Concrete Masonry Walls with Openings' *ASCE Journal of Structural Engineering*, ISSN 0733-9445, 133, 11, November, 1551-1559. [http://dx.doi.org/10.1061/\(ASCE\)0733-9445\(2007\)133:11\(1551\)](http://dx.doi.org/10.1061/(ASCE)0733-9445(2007)133:11(1551))
2007. WIGHT, G. D., KOWALSKY, M. J. **INGHAM, J. M.**, 'Direct Displacement-Based Seismic Design of Unbonded Post-Tensioned Masonry Walls' *ACI Structural Journal*, ISSN 0889-3241/98, 104, 5, Sept-Oct, 560-569.
2007. VOON, K. C, **INGHAM, J. M.** 'Design Expression for the In-plane Shear Strength of Reinforced Concrete Masonry', *ASCE Journal of Structural Engineering*, ISSN 0733-9445, 133, 5, May, 706-713. [http://dx.doi.org/10.1061/\(ASCE\)0733-9445\(2007\)133:5\(706\)](http://dx.doi.org/10.1061/(ASCE)0733-9445(2007)133:5(706))
2006. LAURSEN, P. T., WIGHT, G., **INGHAM, J. M.** 'Assessing Creep and Shrinkage Losses in Post-tensioned Concrete Masonry', *ACI Material Journal*, ISSN 0889-325X, 103, 6, Nov-Dec, 427-435.
2006. BROOKE, N. J., KEYTE, L. M., SOUTH, W., **INGHAM, J. M.**, MEGGET, L. M. 'Seismic performance of inorganic polymer concrete joints' *Proceedings of the Institution of Civil Engineers, Construction Materials*, ISSN 1747-650X, 159, 4, November, 171-179. <http://dx.doi.org/10.1680/coma.2006.159.4.171>
2006. BROOKE, N. J., MEGGET, L. M., **INGHAM, J. M.** 'Bond Performance of Interior Beam-Column Joints with High Strength Reinforcement' *ACI Structural Journal*, ISSN 0889-3241/98 103, 4, July-August, 596-603.
2006. WIGHT, G. D., **INGHAM, J. M.**, KOWALSKY, M. J. 'Shaketable Testing of Rectangular Post-tensioned Concrete Masonry Walls' *ACI Structural Journal*, ISSN 0889-3241/98, 103, 4, July-August, 587-595.
2006. **INGHAM, J. M.** 'Current seismic retrofit research in New Zealand', *The Structural Engineer*, ISSN 1466-5123, 84, 11, June 6, 20-21.
2006. VOON, K. C., **INGHAM, J. M.** 'Experimental in-plane shear strength investigation of reinforced concrete masonry walls' *ASCE Journal of Structural Engineering*, ISSN 0733-9445 132, 3, 400-408. [http://dx.doi.org/10.1061/\(ASCE\)0733-9445\(2006\)132:3\(400\)](http://dx.doi.org/10.1061/(ASCE)0733-9445(2006)132:3(400))
2004. LAURSEN, P. T., **INGHAM, J. M.** 'Structural Testing of Enhanced Post-Tensioned Concrete Masonry Walls' *ACI Structural Journal*, ISSN 0889-3241/98, 101, 6, Nov-Dec, 852-862.
2004. LAURSEN, P. T., **INGHAM, J. M.** 'Structural Testing of Large-Scale Post-Tensioned Concrete Masonry Walls' *ASCE Journal of Structural Engineering*, ISSN 0733-9445, 130, 10, 1497-1505. [http://dx.doi.org/10.1061/\(ASCE\)0733-9445\(2004\)130:10\(1497\)](http://dx.doi.org/10.1061/(ASCE)0733-9445(2004)130:10(1497))
2003. SRITHARAN, S., **INGHAM, J. M.** 'Application of Strut-And-Tie Concepts to Concrete Bridge Joints in Seismic Regions' *Journal of the Precast/Prestressed Concrete Institute*, ISSN: 0887-9672, 48, 4, 66-90.
2003. TO, N. H. T., **INGHAM, J. M.**, SRITHARAN, S. 'Strut-and-Tie Computer Modelling of Reinforced Concrete Bridge Joint Systems', *Journal of Earthquake Engineering*, ISSN: 1363-2469, 7, 3, 463-493. <http://dx.doi.org/10.1080/13632460309350459>
2002. LIN, Y., **INGHAM, J. M.**, BUTTERWORTH, J. 'Shear Stud Performance of Lightweight Polystyrene Concrete Composite Sections', *ACI Special Publication on Innovations in Design with Emphasis on Seismic, Wind, and Environmental Loading; Quality Control and Innovations in Materials/Hot-Weather Concreting*, ACI SP-209, 89-108.
2001. **INGHAM, J. M.**, DAVIDSON, B. J., BRAMMER, D. R., VOON, K. C. 'Testing and Codification of Partially Grout-filled Nominally-reinforced Concrete Masonry subjected to In-plane Seismic Loads' *Journal of The Masonry Society*, ISSN: 0741-1294, 19, 1, 83-96. <http://www.masonrysociety.org/journalfiles/10023.pdf>
2001. LAURSEN, P. T., **INGHAM, J. M.** 'Structural Testing of Single-Storey Post-Tensioned Concrete Masonry Walls' *Journal of The Masonry Society*, ISSN: 0741-1294, 19, 1, 69-82. <http://www.masonrysociety.org/journalfiles/10022.pdf>
2001. SRITHARAN, S., **INGHAM, J. M.** 'Discussion of Strut and Tie Models for Analysis/Design of External Beam-Column Joints' *Magazine of Concrete Research*, 53, 1, 63-66. <http://dx.doi.org/10.1680/macr.53.1.63.39499>
1999. SRITHARAN, S., **INGHAM, J. M.**, PRIESTLEY, M. J. N., SEIBLE, F. 'Design and Performance of Bridge Cap Beam/Column Joints using Headed Reinforcement and

Mechanical Couplers' *ACI Special Volume on Developments of Seismic Steel Reinforcement Products and Systems*, ACI SP-184, 7-22.

1998. SRITHARAN, S., **INGHAM, J. M.**, PRIESTLEY, M. J. N., SEIBLE, F. 'Bond Slip of Bridge Column Reinforcement Anchored in Cap Beams' *ACI Special Volume on Bond and Development of Reinforcement - A Tribute to Dr. Peter Gergely*, SP-180, 319-345.
1998. **INGHAM, J. M.**, PRIESTLEY, M. J. N., SEIBLE, F. 'Cyclic Response of Bridge Knee Joints with Circular Columns' *Journal of Earthquake Engineering*, ISSN: 1363-2469, 2, 3, 357-391. <http://dx.doi.org/10.1080/13632469809350327>

New Zealand journal publications (NZSEE)

2010. DIZHUR, D., ISMAIL, N., KNOX, C., LUMANTARNA, R., **INGHAM, J.M.** 'Performance of Unreinforced and Retrofitted Masonry Buildings during the 2010 Darfield Earthquake', *Bulletin of the New Zealand Society for Earthquake Engineering*, 43, 4, Dec., 321-339.
2010. RUSSELL, A. P., **INGHAM, J. M.** 'Prevalence of New Zealand's Unreinforced Masonry Buildings'. *Bulletin of the New Zealand Society for Earthquake Engineering*, 43, 3, Sept., 182-201.
2002. TO, N. H. T., **INGHAM, J. M.**, SRITHARAN, S. 'Strut-and-Tie Computer Modelling of Reinforced Concrete Bridge Portal Frames' *Bulletin of the New Zealand Society for Earthquake Engineering*, 35, 3, 165-189.
2002. **INGHAM, J. M.**, LIDDELL, D., DAVIDSON, B. J. 'An Assessment of Parameters Describing the Response of a Reinforced Concrete Beam' *Bulletin of the New Zealand Society for Earthquake Engineering*, 35, 1, 1-16.
2001. TO, N. H. T., **INGHAM, J. M.**, SRITHARAN, S. 'Monotonic Nonlinear Analysis of Reinforced Concrete Knee Joints using Strut-and-Tie Computer Models' *Bulletin of the New Zealand Society for Earthquake Engineering*, 34, 3, 169-190.
2001. **INGHAM, J. M.**, LIDDELL, D., DAVIDSON, B. J. 'Influence of Loading History on the Response of a Reinforced Concrete Beam' *Bulletin of the New Zealand Society for Earthquake Engineering*, 34, 2, 107-124.
1997. **INGHAM, J. M.**, PRIESTLEY, M. J. N., SEIBLE, F. 'Seismic Response of Bridge Knee Joints having Columns with Interlocking Spirals' *Bulletin of the New Zealand National Society for Earthquake Engineering*, 30, 2, 114-132.

New Zealand journal publications (SESOC)

2011. LIN, Y.-W., DERAKHSHAN, H., DIZHUR, D., LUMANTARNA, R., WOTHERSPOON, L., **INGHAM, J. M.** 'Testing and seismic retrofit of 1917 Wintec F block URM building in Hamilton', *Journal of the Structural Engineering Society of New Zealand*, ISSN 0114-2879, 24, 1, April, 47-57.
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1995. **INGHAM, J. M.** 'Seismic Performance of Bridge Knee Joints - Volume 3, Design Examples' *Doctoral Thesis Dissertation, University of California at San Diego, La Jolla, California*, 502.
1994. **INGHAM, J. M.**, PRIESTLEY, M. J. N., SEIBLE, F. 'Seismic Performance of Bridge Knee Joints - Volume 2, Circular Column/Cap Beam Experimental Results' *SSRP - 94/17*, University of California at San Diego, La Jolla, California, 324.
1994. **INGHAM, J. M.**, PRIESTLEY, M. J. N., SEIBLE, F. 'Seismic Performance of Bridge Knee Joints - Volume 1, Rectangular Column/Cap Beam Experimental Results', *SSRP - 94/14*, University of California at San Diego, La Jolla, California, 277.
1994. PRIESTLEY, N., MACRAE, G., **INGHAM, J.**, INNAMORATO, D. 'Chapter 4 - I-10 Santa Monica Freeway/La Cienega-Venice Blvd. Undercrossing' *The Northridge Earthquake of January 17, 1994 - Damage Analysis of Selected Freeway Bridges*, Eds. PRIESTLEY², M. J. N., SEIBLE³, F., AND UANG³, C. M., *SSRP - 94/06*, University of California at San Diego, La Jolla, California, 49-84.
1990. **INGHAM, J. M.** 'Local Buckling of Yacht Mast Sections' *Masters Thesis Dissertation, Department of Civil Engineering, University of Auckland, Auckland, New Zealand*, 129.

Other Works:

2011. **INGHAM, J. M.**, MOON, L., DICKIE, J., DIZHUR, D. 'Performance of masonry buildings in the Christchurch earthquakes', Proceedings of the Ninth Pacific Conference on Earthquake Engineering: Building an earthquake resilient society, 14-16 April, Auckland, Presentation No. 163.
2009. **INGHAM, J. M.**, ELWOOD, K. 'Detailed Seismic Assessment of heritage Unreinforced Masonry Buildings with Flexible Timber Diaphragms', The 6th Research Symposium on Multi-Hazards around the Pacific Rim 'Multi-disciplinary Approaches for Hazard Mitigation', Beijing, China, 27-29 August, 29-30.
2009. **INGHAM, J. M.**, OMENZETTER, P., CHOI, K.-H. 'Current concrete research at the University of Auckland, New Zealand', *Magazine of the Korea Concrete Institute*, ISSN 1018-1415, 21, 6, (Serial No. 113), November, 98-104.
2009. **INGHAM, J. M.**, and MA, Q. 'NZNEES: Addressing New Zealand's Remoteness from its International Earthquake Engineering Collaborators', Invited Plenary Presentation (oral presentation only), NSF CMMI Engineering Research and Innovation Conference 2009, Honolulu, Hawaii, USA, June 22-25.
2009. ROGERS, R. A., AL-ANI, M., **INGHAM, J. M.** 'Severity, prevalence and distribution of pretensioned prestressing steel corrosion in the New Zealand concrete bridge stock', 7th

- Austrroads Bridge Conference: Bridges linking communities, (poster presentation only), Auckland, New Zealand, May 26-29.
2009. AL-ANI, M., ROGERS, R. A., **INGHAM, J. M.**, BROOKE, N., 'Assessment of Shear Strength Limits on High-Strength, Prestressed Concrete Bridge Beams', 7th Austrroads Bridge Conference: Bridges linking communities, (poster presentation only), Auckland, New Zealand, May 26-29.
2009. **INGHAM, J. M.** 'Bridge research priorities for New Zealand', 7th Austrroads Bridge Conference: Bridges linking communities, (Oral presentation only), Auckland, New Zealand, May 26-29.
2009. DIZHUR, D., RUSSELL, A. P., **INGHAM, J. M.**, LAUSEN, P. T. 'Experience from California, USA on Seismic Retrofit of Unreinforced Masonry Buildings', 2009 NZSEE Conference: 'Why do we still tolerate buildings that are unsafe in earthquakes?', New Zealand Society for Earthquake Engineering, Paper No. 12 (oral presentation only), Christchurch, April 3-5.
2009. ISMAIL, N., **INGHAM, J. M.**, 'Reconstruction Project after Devastating 2005 Pakistan Earthquake', 2009 NZSEE Conference: 'Why do we still tolerate buildings that are unsafe in earthquakes?', New Zealand Society for Earthquake Engineering, Paper No. 14 (oral presentation only), Christchurch, April 3-5.
2009. DIZHUR, D., DERAKHSHAN, H., CUTHBERT, J., **INGHAM, J. M.**, 'In-situ Out-of-Plane Testing of Unreinforced Masonry Partition Walls', 2009 NZSEE Conference: 'Why do we still tolerate buildings that are unsafe in earthquakes?', New Zealand Society for Earthquake Engineering, Paper No. 62 (poster presentation only), Christchurch, April 3-5.
2009. EGBELAKIN, T., WILKINSON, S., **INGHAM, J. M.**, 'Why are Building Owners of EPBs Reluctant to Retrofit?', 2009 NZSEE Conference: 'Why do we still tolerate buildings that are unsafe in earthquakes?', New Zealand Society for Earthquake Engineering, Paper No. 63 (poster presentation only), Christchurch, April 3-5.
2009. OYARZO-VERA, C., FLEMING, R., McVERRY, G., **INGHAM, J. M.**, 'Seismic Zonation and Default Suite of Ground Motion Records for Time-history Analysis in New Zealand', 2009 NZSEE Conference: 'Why do we still tolerate buildings that are unsafe in earthquakes?', New Zealand Society for Earthquake Engineering, Paper No. 71 (poster presentation only), Christchurch, April 3-5.
2006. COLEMAN, S. **INGHAM, J. M.** 'Civil engineering for life', 2006 Engineering Winter Lecture Series, University of Auckland, Auckland, New Zealand, August 15.
2006. TO, N., **INGHAM, J. M.**, SRITHARAN, S., DAVIDSON, B. 'Cyclic Strut-and-Tie Modeling of Reinforced Concrete Structures' Special Technical Session on Application of Strut-and-Tie Modeling for Seismic Design, ACI Spring Convention, Charlotte, North Carolina, USA, March 26-30.
2005. DAVIDSON, B. J., **INGHAM, J. M.**, WHANG, D. 'NEES visualisation portal at the University of Auckland', 1st US-Portugal International Workshop 'Grand Challenges in earthquake engineering', Lamago, Portugal, July 11-13.
2005. **INGHAM, J. M.** 'Proposed research investigating retrofit solutions for New Zealand's earthquake risk multi-storey buildings', 1st US-Portugal International Workshop 'Grand Challenges in earthquake engineering', Lamago, Portugal, July 11-13.
2004. **INGHAM, J. M.** 'Changes to NZS4230:2004', Auckland Structural Group, 23 November.
2003. **INGHAM, J. M.** 'Unbonded Post-tensioned concrete structures' IPENZ Convention 2003, Hamilton, 20 March.
2002. SRITHARAN, S, **INGHAM, J. M.** 'Force Transfer Method for Seismic Design of Cap Beam-to-Column Concrete Bridge Joints' Technical Session on Seismic Design of Long Span Bridges, American Concrete Institute Fall Convention, Phoenix, Arizona, Oct. 27-Nov. 1.
2002. **INGHAM, J. M.** 'The New Zealand Masonry Standards Landscape, and a Behind-the-scenes look at NZS 4230:2003' New Zealand Masonry Trades Employers Federation and New Zealand Concrete Masonry Association Combined Conference, Broadbeach, Gold Coast, Australia, 5-6 September.
2002. **INGHAM, J. M.**, 'Analysis and Design of Reinforced Concrete Structures' University of Auckland Short Course, Auckland, 23 May.
2002. **INGHAM, J. M.**, 'A review of recent developments in the Art and Science of unbonded prestressed concrete frames and walls for seismic response', Auckland Structural Group, 12 February.
2001. **INGHAM, J. M.** 'NZCMA Initiatives in Design' New Zealand Masonry Trades Employers Federation and New Zealand Concrete Masonry Association Combined Conference, Hamilton, 7-8 September.
2001. **INGHAM, J. M.** 'Strategies for Sustainable Economic Development' Access Community Radio, Planet FM 104.6, Monday July 23, 8.20-8.40am.

1997. **INGHAM, J. M.** 'Introduction to the Strut and Tie Method of design', *Auckland Structural Group*, 17 June.
1997. **INGHAM, J. M.** 'Prestressed Masonry in New Zealand' *New Zealand Concrete Construction*, April/May, 16-18.
1997. **BADIRA⁵, H., FENWICK, R., INGHAM, J.** 'Joints under Load' *New Zealand Concrete Construction*, August/September, 4-7.

RESEARCH GRANTS / FUNDING (GST Excl):

Career totals:

Year	External funding				Internal funding				Cumulative Total	
	No.	Annual	Cum No.	Cum Total (\$)	No.	Annual	Cum No.	Cum Total (\$)	Cum. No.	(NZ\$)
1995	0	0	0	0	1	5,730	1	5,730	1	5,730
1996	0	0	0	0	1	11,850	2	17,580	2	17,580
1997	1	5,060	1	5,060	0	0	2	17,580	3	22,640
1998	2	15,000	3	20,060	0	0	2	17,580	5	37,640
1999	3	47,000	6	67,060	0	0	2	17,580	8	84,640
2000	2	56,443	8	123,503	0	0	2	17,580	10	141,083
2001	4	61,000	12	184,503	5	41,910	7	59,490	19	243,993
2002	2	39,444	14	223,947	0	0	7	59,490	21	283,437
2003	0	0	14	223,947	1	110,000	8	169,490	22	393,437
2004	3	3,346,833	17	3,570,780	1	1,000	9	170,490	26	3,741,270
2005	0	0	17	3,570,780	3	11,800	12	182,290	29	3,753,070
2006	0	0	17	3,570,780	0	0	12	182,290	29	3,753,070
2007	3	221,711	20	3,792,491	0	0	12	182,290	32	3,974,781
2008	3	139,833	23	3,932,324	0	0	12	182,290	35	4,114,614
2009	2	28,186	25	3,960,510	0	0	12	182,290	37	4,142,800
2010	4	490,643	29	4,451,153	0	0	12	182,290	39	4,633,443
2011					0	0	12	182,290		

As Principal Investigator (GST excl):

2011. 'Observed Performance of Residential Masonry Veneer Construction in the 2010/2011 Canterbury Earthquake Swarm', *Report to Clay Brick and Paver Manufacturers Association (NZ) Inc*, August, \$49,220.
2011. 'The Performance of Unreinforced Masonry Buildings in the 2010/2011 Canterbury Earthquake Swarm', *Report to the Royal Commission of Inquiry*, August, \$20,000.
2010. 'Sponsorship for David Biggs to deliver structural forensics seminars in NZ', *Fulbright New Zealand*, December, \$3,044.
2010. 'Utilising waste paint and glass in concrete', *Technology New Zealand*, Contract Number ZRGL1001, November, \$62,266
2010. Extension to 'Retrofit Solutions for New Zealand's Earthquake Risk Multi-storey Buildings', Natural Hazards Platform, *Public Good Science Fund*, 9072-3603992, October, \$400,000.00
2010. 'Waste paint as a polymeric admixture substitute in concrete', *Technology New Zealand*, Contract Number ZRTP0901, March, \$25,333
2009. 'Mitigating ASR when using waste glass in concrete', *Royal Society of New Zealand, Bilateral Research Activities Programme*, 9072-3624347, June, \$2,853
2009. 'Seismic Retrofitting Heritage Structures with Sprayed 'Bendable' Concrete', *Technology New Zealand*, Contract Number ZRTP0801, March, \$25,333
2008. 'Design of Prestressed Concrete Bridges to Resist Shear', *Land Transport New Zealand TAR 08/38*, June, \$42,000
2008. 'Decision tool to mitigate prestressed concrete bridge corrosion', *Land Transport New Zealand TAR 08/37*, June, \$72,500

2008. 'The use of recycled concrete in ready mix concrete production', *Technology New Zealand, Contract Number ALCC0701, March, \$25,333 (closed)*
2007. 'Earthquake Engineering on KAREN' *Royal Society of New Zealand (REANNZ), 9072-3609159, August, \$178,489*
2007. 'Use of Recycled Paint in Block Fill for Concrete Masonry – Paint Crete', *Technology New Zealand, Contract Number RRRLO601, February, \$25,444 (closed)*
2007. 'Earthquake Engineering on KAREN', *Royal Society of New Zealand (REANNZ), 9072-3608255, January, \$17,778 (closed).*
2005. 'A/P Sivalingam Sriharan', *University of Auckland Distinguished Research Visitor Awards Fund, 9272-3606526, September, \$6,000.00 (closed).*
2005. 'International collaboration in earthquake engineering research', *University of Auckland International Research Collaboration Visits Fund, 9272-3606273, May, \$3,300.00 (closed).*
2005. 'Seismic performance of post-tensioned concrete masonry walls for residential construction', *University of Auckland Graduate Research Fund, 9272-3606096, May, \$2,500.00 (closed).*
2004. 'Retrofit Solutions for New Zealand's Earthquake Risk Multi-storey Buildings', *Foundation for Research, Science and Technology, Public Good Science Fund, 9072-3603992, July, \$3,333,333.00*
2004. 'Seismic performance of post-tensioned concrete masonry walls for residential construction', *University of Auckland Graduate Research Fund, 9272-3604812, May, \$1,000.00 (closed).*
2004. 'NZS 4230:2004 User Guide', *New Zealand Concrete Masonry Association, 9072-3604236, April, \$10,000.00 (closed).*
2004. 'Investigating Temperature Matched Curing for New Zealand Cements', *Allied Concrete Limited, 9072-3604401, April, \$3,500.00 (closed).*
2003. 'Analytical determination of the seismic response of post-tensioned rocking walls' *University of Auckland Research Fund Postdoctoral Fellowship, 9272-3603564, July, NZ\$110,000.00 (closed)*
2002. 'Influence of Steel and Polypropylene Fibre Reinforcement on Restrained Shrinkage and Cracking' *Novocon New Zealand Limited, 9072-3602851, November, NZ\$12,000.00 (closed).*
2002. 'Assessing the Seismic Performance of Reinforcement Coupler Systems' *Foundation for Research, Science and Technology, 9072-3601373, May, NZ\$24,444.45 (closed).*
2001. 'Seismic Design of a Single Storey Building Using Unbounded Precast Post-Tensioned Concrete Walls' *Firth Industries Ltd, 9072-3601613, December, NZ\$10,000.00 (closed).*
2001. 'Bracing Capacity of Partially Grouted Concrete Masonry Walls with Openings' *Earthquake Commission Research Foundation, 9072-3601570, December, NZ\$18,000.00 (closed).*
2001. 'Analysis and design of structural concrete using strut-and-tie models' *University of Auckland Graduate Research Fund, 9272-3601414, November, NZ\$3,000.00 (closed).*
2001. 'Influence of Loading History on Concrete Structures - Phase II' *Earthquake Commission Research Foundation, 9072-3601236, October, NZ\$23,000.00.*
2001. 'Influence of loading histories on seismic response' *University of Auckland Research Fund, 9272-3601085, October. NZ\$4,000.00.*
2001. 'Influence of Loading History on Concrete Structures - Phase II' *Cement and Concrete Association of New Zealand, 9072-3600937, July, NZ\$10,000.00.*
2001. 'Seismic Design of Post-Tensioned Concrete Walls' *Emerging Research Excellence Award, University of Auckland, 9272-3600855, May, NZ\$30,000.00 (closed).*
2001. 'Seismic Response of Post Tensioned Concrete Masonry' *University of Auckland Research Fund, 9272-3600480, May. NZ\$2,310.00 (closed).*
2001. 'Seismic Design of Prestressed Concrete Masonry Walls' *University of Auckland Graduate Research Fund, 9272-3600565, March, NZ\$2,600.00 (closed).*
2000. 'Concrete Housing' *Foundation for Research Science and Technology, 9072-3368372, November, NZ\$22,943.00 (closed).*
2000. 'Lightweight Concrete Diaphragms' *Fletcher Concrete and Infrastructure Ltd, 9072-3467846, October, NZ\$18,500.00 (closed).*
1999. 'Influence of Loading History' *Cement and Concrete Association of New Zealand, 9072-3467835, May, NZ\$5,000.00 (closed).*
1999. 'Shear strength of masonry walls' *Earthquake Commission Research Foundation, 9072-3467834, First instalment August 1999 (NZ\$16,000.00), Second instalment December 2002 (NZ\$3,000.00) (closed).*
1999. 'Influence of Loading History' *Earthquake Commission Research Foundation, 9072-3467831, April, NZ\$11,000.00 (closed)*
1998. 'Prestressed Masonry Walls' *New Zealand Concrete Masonry Association, 9072-3467828, First instalment November 1998 (NZ\$7,500.00), Second instalment November 1999 (NZ\$15,000.00), Third Instalment October 2000 (NZ\$15,000.00) (closed).*

1998. 'Prestressed Masonry Walls' *Cement and Concrete Association of New Zealand*, 9072-3467827, November, NZ\$7,500.00 (closed).
1997. 'Prestressed Masonry' *Cement and Concrete Association of New Zealand*, 9072-3467824, November, NZ\$5,060.00 (closed).
1996. 'Prestressed Masonry' *University of Auckland New Staff Members Fund*, 9272-3417420, April, NZ\$11,850.00 (closed).
1995. 'Seismic Performance of Exterior Beam-Column Connections' *University of Auckland Research Fund*, A08/35790/F3417402, November, NZ \$5,730.00 (closed).

As Collaborator:

2011. LEON, R. 'RAPID: Collection of Data on the Performance of Wood Diaphragms in Buildings during the February 2011 Christchurch, New Zealand Earthquake', *US National Science Foundation, Grant #CMMI-1138609, Georgia Tech Research Corporation, US\$40,597.00*
2011. SCHULTZ, A. E. 'RAPID: Data Collection on the Performance of Adhesive Anchor Retrofits in Unreinforced Masonry Buildings during the February 2011 Christchurch, New Zealand Earthquake', *US National Science Foundation, Grant #CMMI-1138614, University of Minnesota-Twin Cities, US\$49,679.00*
2009. CHOI, D.-U. 'Sustainable Concrete Technology', *Korea National Research Foundation, September, \$10,000,000 Korean Won (approx. \$12,000)*.
2007. GRIFFITH, M. 'Earthquake protection of masonry buildings', *Australian Research Council Discovery Grant, University of Adelaide Grant # DP 0879592, AUS\$435,000*.
2003. MORGAN, T. K. K., 'Sustainable Earth Fibre Housing', *Foundation for Research, Science and Technology, Public Good Science Fund UOAX0305, 9072-3602893, October, \$1,100,000.00*
Replaced Hugh Morris as Objective Leader 2007 - 2008.
2003. SINGHAL, N. 'Development of permeable paving system', *Foundation for Research, Science and Technology, 9072-3602993, \$24,444.44*.
2003. KOWALSKY, M. J. 'The Dynamic Seismic Performance and the Structural Seismic Design of Residential Post-tensioned Concrete Masonry', *National Concrete Masonry Association, North Carolina State University Grant #522396, February, US \$9,190.00*.

DOCTORAL CONVOCATION RECORDS

Peter Thorup LAURSEN, Doctor of Philosophy in Civil Engineering

Seismic Analysis and Design of Post-tensioned Concrete Masonry Walls

Peter Laursen graduated Master of Science in Engineering Sciences (Structural Engineering) from the University of California, San Diego in 1995. Following four years working as a bridge design engineer in the United States and in France, Peter commenced his Doctor of Philosophy study in 1999. His PhD involved research considering the analysis and design of post-tensioned concrete masonry walls, with special emphasis given to performance during an earthquake. The principal investigator was Dr Jason Ingham.

Using unbonded post-tensioning, walls are prestressed vertically by means of strands or bars which are passed through vertical ducts inside the walls. As the walls are subjected to lateral displacements during an earthquake, gaps form at the horizontal joints, reducing the system stiffness. As the prestressing strands remain elastic they provide a restoring force, which will return the walls to their original alignment upon unloading. The key feature in this behaviour is attributable to the tendons being unbonded over the full wall height, allowing uniform distribution of tendon strain over the entire tendon length.

In the context of earthquake engineering, verification of structural seismic response plays a crucial role in understanding the behaviour of a particular construction form. Structural testing was invoked to confirm that fully grouted unbonded post-tensioned concrete masonry is a competent material combination for ductile structural wall systems. In particular, walls strengthened in the flexural compression zones with confining plates proved particularly successful in withstanding severe simulated ground shaking. A prediction method for wall in-plane behaviour was proposed, and design tools such as displacement spectra were developed for ductile seismic design of post-tensioned concrete masonry walls.

Peter is currently employed as a bridge design engineer with COWI A/S in Denmark.

Nicholas Hin Tai TO, Doctor of Philosophy in Civil Engineering

Nonlinear Structural Analysis using Strut-and-Tie Models

Nicholas To graduated Bachelor of Civil Engineering from The University of Auckland in 1998. Subsequently, Nicholas commenced his Doctor of Philosophy in 1999. His PhD research involved development of the Strut-and-Tie methodology to analyse reinforced concrete structures. This research was supervised by Dr Jason Ingham.

Increasing popularity of the strut-and-tie modelling technique amongst research communities and practising engineers is due to its rational analytical approach and its superiority, compared to conventionally employed empirical methods for analysing complicated reinforced concrete structural systems. Nevertheless, this analysis methodology is not used as a routine procedure in design offices, primarily because of the perceived ambiguity involved in appropriate model formulation. In addition, until recently application of the strut-and-tie methodology has been limited to the prediction of strength, with utilisation of this modelling technique to capture nonlinear structural deformation being rather minimal.

Nicholas's research represents an original contribution to the development of the strut-and-tie modelling methodology by providing a systematic approach for applying this modelling technique to analyse the nonlinear monotonic and cyclic behaviour of reinforced concrete structural systems with distinct reinforcement details.

Several issues pertaining to the modelling technique were thoroughly investigated. These issues included model formulation strategies for different structural members, and the determination of suitable effective strength and sizing of model elements. Also, the seismic response of various prototype structures when experimentally subjected to cyclic force and time-history earthquake loading was predicted using the developed modelling procedure.

Nicholas has published his findings in a variety of journals and at conferences associated with earthquake engineering and the response of concrete structures. Nicholas is currently working at the Auckland office of Sinclair Knight Merz.

Gavin Dean WIGHT, Doctor of Philosophy in Civil Engineering

Seismic Performance of a Post-tensioned Concrete Masonry Wall System

Gavin Wight graduated Bachelor of Civil Engineering Degree with first class honours from the University of Auckland in 2001. Subsequently, Gavin commenced his Doctor of Philosophy in 2002. He was the recipient of a University of Auckland Doctoral Scholarship, a Todd Foundation Technology Scholarship and a Fulbright Exchange Scholarship permitting him to conduct the necessary experimental research at North Carolina State University, USA, during 2003 and 2004. His PhD research investigated the seismic performance of a post-tensioned concrete masonry wall system designed for the residential market in New Zealand, and the study concluded with the construction of New Zealand's first post-tensioned concrete masonry house. This research was supervised by Dr Jason Ingham.

Post-tensioned concrete masonry walls derive their lateral strength and self-centering behaviour from vertical unbonded post-tensioning. During in-plane loading, a horizontal crack forms at the wall base, which minimises masonry tensile strains and associated wall damage.

Shake table testing was used to investigate the response of rectangular walls, walls with openings and shrinkage control joints when subjected to seismic loading. Rocking was shown to be the predominant deformation component, with minimal residual displacements at the conclusion of testing. Damage was restricted to the lower wall corners and above and below openings.

This study has provided designers with a more accurate expression for estimating tendon stress at the nominal strength limit state for in-plane walls, a displacement based design method for post-tensioned masonry walls and an indication of the level of prestress losses that can be expected when using concrete masonry.

Gavin has published his findings in numerous journals and conference proceedings around the world. Gavin is currently employed as a design engineer with VSL in Australia.

Kok Choon VOON, Doctor of Philosophy in Civil Engineering

In-plane Seismic Design of Concrete Masonry Structures

Kok Choon Voon graduated Bachelor of Civil Engineering Degree with first class honours from the University of Auckland in 1998. Kok Choon Commenced his Doctoral of Philosophy in 2001. His PhD research consisted of two studies, with the first part investigated masonry shear strength and the second study investigated the influence of openings on the lateral strength of masonry walls. These researches were supervised by Associate Professor Jason Ingham.

Masonry has been used as a common constructional material in a large proportion of building projects in New Zealand. However, the over conservative treatment of masonry shear strength by the former masonry design standard has significantly restricting cost-effective masonry design. Consequently, structural testing was carried out to investigate the shear strength of masonry walls under seismic condition. Based on findings derived from the mentioned experimental study and other relevant overseas research, a new masonry shear expression was developed. This new masonry shear expression has since been implemented into the latest version of masonry design standard.

For the second part of Kok Choon's PhD research, further structural testing was carried out to investigate the influence of openings and length of trimming reinforcement on the lateral strength of masonry walls. The study concluded that the strut-and-tie modelling technique can be used to more accurately estimate the in-plane strength of such masonry wall construction.

Kok Choon has published his findings in numerous journals and conference proceedings around the world. Kok Choon is currently working as a design engineer with Wilton Joubert Ltd of New Zealand.

Alistair Peter RUSSELL, Doctor of Philosophy in Civil Engineering

Characterisation and Seismic Assessment of Unreinforced Masonry Buildings

Alistair Russell graduated Bachelor of Civil Engineering with first class honours from the University of Auckland in 2005. Subsequently, Alistair commenced his Doctor of Philosophy in 2006 in the Department of Civil and Environmental Engineering. His PhD involved research considering the characterisation and seismic performance of unreinforced masonry buildings in New Zealand. This research was supervised by Dr Jason Ingham.

Unreinforced masonry buildings remain New Zealand's most earthquake prone structures. These buildings in general lack the strength and energy dissipation characteristics to withstand the lateral forces induced in an earthquake. Whilst no longer permitted as a construction material in New Zealand, many historic and heritage unreinforced masonry buildings still exist today.

Alistair's research primarily investigated the seismic performance of unreinforced masonry buildings, with an emphasis on the response of unreinforced masonry walls responding in-plane, and in particular, the in-plane response of flanged unreinforced masonry walls.

Structural testing of unreinforced masonry walls showed that the presence of flanges (return walls) has a significant effect on the behaviour of walls responding in-plane. Flanges increase the force and displacement capacity of in-plane loaded walls, when compared with in-plane loaded walls without flanges.

Alistair's research identified that in order to accurately account for the strength inherently available in unreinforced masonry buildings, the effect of flanges should be incorporated into the seismic assessment procedure.

Alistair has published his findings in numerous journals and conference proceedings around the world. Alistair is currently employed as a post-doctoral researcher at the University of British Columbia in Vancouver, Canada.

Hossein DERAKHSHAN, Doctor of Philosophy in Civil Engineering

Seismic Assessment of Out-of-Plane Loaded Unreinforced Masonry Walls

Hossein Derakhshan graduated Bachelor of Civil Engineering from Shiraz University in 2000 and Master of Civil Engineering from University of Tehran in 2003. Hossein commenced his Doctor of Philosophy in 2007 in the Department of Civil and Environmental Engineering. He studied the seismic behavior of out-of-plane loaded unreinforced masonry walls. This research was supervised by Associate Professor Jason Ingham.

Out-of-plane failure of unreinforced masonry walls has been reported as the major source of financial loss in many earthquakes. Current seismic evaluation of these structural elements is based upon obtaining a reasonably accurate estimation of post-cracking seismic displacement demand.

Hossein's research primarily investigated the influence of several aspects of unreinforced masonry buildings on the out-of-plane displacements imposed on walls. Two main factors were the stiffness properties of timber floor diaphragms that supported the wall and the number of stories of the building.

Structural laboratory and in-situ testing and subsequent analytical modeling were conducted to investigate the wall cracking pattern and post-cracking static behavior. Hossein developed a method for systematic calculation of cracked wall static behaviour, and he continued his research into development of a numerical model to investigate the dynamic behaviour of walls. The numerical model showed that the flexibility of timber floor diaphragms reduced wall dynamic stability. The model was next used to identify a limit for floor diaphragm stiffness that minimised the adverse effects on stability of walls in single-storey and two-storey buildings.

Hossein has published his findings in numerous journals and conference proceedings around the world, and he is currently employed as a structural engineer with Aurecon in Christchurch.

Richard Stuart HENRY, Doctor of Philosophy in Civil Engineering

Self-centering Precast Concrete Walls for Buildings in Regions with Low to High Seismicity

Richard Henry graduated with a Bachelor of Civil Engineering Degree with first class honours from the University of Auckland in 2007 and immediately commenced his Doctor of Philosophy studies in the Department of Civil and Environmental Engineering. His PhD research investigated the seismic performance of self-centering precast concrete walls that reduce the damage caused to a building during an earthquake. This research was supervised by Associate Professor Jason Ingham and Professor Sri Sritharan, and was supported by a Bright Future Top Achiever Doctoral Scholarship and a Fulbright Graduate Award that permitted him to conduct necessary research with his co-supervisor at Iowa State University, during 2008 and 2009.

Self-centering precast concrete walls derive their lateral strength and behaviour from vertical unbonded post-tensioning. During in-plane loading, a horizontal crack forms at the wall base, which minimises concrete tensile strains and associated wall damage. Additionally, the unbonded post-tensioning acts like a rubber band that pulls the structure back to its original position following an earthquake. Such wall systems can provide excellent seismic resilient building systems that can reduce the economic impact that is caused by structures that are damaged during an earthquake.

Richard's study focused on both individual post-tensioned walls that are suitable for buildings in regions with low seismicity and the PreWEC wall system that is suitable for buildings in regions with moderate to high seismicity. Experimental tests and analytical models were used to investigate the behaviour of the self-centering wall systems and improve and simplify the design procedures.

In addition to the wall behaviour, Richard's study went on to investigate the performance of the entire building. The interaction between the wall system and surrounding structure is critical to ensure that a seismic resilient structure is achieved. Analyses were used to show that the wall-to-floor connections had a significant impact on the building response and should be considered during the design process.

Richard has published his findings in numerous journals and conference proceedings around the world. He is currently employed as a lecturer in the Department of Civil and Environmental Engineering.