

University of Auckland
Standard
ACADEMIC CV



THE UNIVERSITY OF AUCKLAND
NEW ZEALAND

NAME: John Bentley Chapman
CURRENT POSITION: Senior Lecturer
DEPARTMENT: Architecture & Planning
FACULTY: National Institute of Creative Arts and Industries

Educational Qualifications: [Tertiary only]

1971 University of Auckland, B.E.(honours first class) – Civil
1974 Auckland College of Education, Diploma of Education
1978 Qualified as a member of Institute of Professional Engineers of New Zealand
2004 Qualified as a Certified Professional Engineer

Professional Societies:

1978 - Member of IPENZ (Institution of Professional Engineers of NZ)

Career as Consulting Engineer

1971 – 1980 Various positions within consulting engineering companies
1981 – 2000 Principal of consulting engineering company, J B Chapman Ltd.

Research and Teaching at the School of Architecture & Planning:

1993 to 2001. 50 % Appointment
2002 - 100% Appointment

Research Summary Statement:

Most of my research has been in the field of timber structures and their environmental benefits. I am joining with Industry and investigating possible new areas of use for pinus radiata. Recently, my work has been looking into various new ways that radiata timber can be considered as the main structural elements in commercial and industrial building.

Even though this is a new field of research in New Zealand, it is well under way in Europe. The challenge to researchers is to develop sufficiently strong and reliable joints using the timber and technologies. In 2010, an identity was established, the ‘Timber Building studies’ Group, with likeminded researchers at the University of Auckland.

Research topics, in historical order:

- 1) Driving pinus radiata piles under house foundations to reduce construction time and costs approximately 200 houses a year are being built, in the Auckland area, according to the findings of this research, with cost savings of around \$30/sq.m. of floor slab
The fees for consulting to the private sector on these projects is in excess of \$20,000
- 2) The advantages of placing house framing studs at 400c/c, and without nogs. This research shows that the methods of constructing house framing in North America has definite benefits over the way it is typically done in New Zealand.
- 3) Initial investigation into using pinus radiata pole columns for multi-storey building. This work was done with the assistance of a masters student. It was an initial feasibility study into the usefulness in utilising radiata poles as the structural elements for large commercial buildings
- 4) Timber poles as the main structural elements for multi-storey residential building. The environmental benefits of this type of construction are significant when compared to steel and reinforced concrete. This topic has been of interest to conferences with the theme of sustainability. The NZ Timber Design Society contributed \$2500 to aid this study.
- 5) Timber poles as the main elements in large industrial trusses. This research was carried out in association with a masters student. The lessons for this research were gained from studying historic

timber structures in New Zealand, which include road and rail bridges and multi-storey building to 7 stories.

6) Timber as a sustainable structural material. This study was an in depth look at the environmental advantages of multi-storey building using timber; when compared to typical construction in steel and reinforced concrete. The study is in line with the work of other researchers in the School of Architecture in the field of sustainability.

7) Timber poles as the main structural elements in commercial building. This research has been prompted by interest from private industry. They have talked to us about the possibility, if all the construction issues can be resolved, into providing the funds for a 6 storey building, utilising radiata poles as the main structural elements. Also, they proposed that the building would be available for site studies into performance etc.

8) Round timber building systems in New Zealand – existing and proposed. This study was the topic for a conference in Germany on building systems

9) Development of a NZ timber information website. This research was done with a masters student and was requested by Scion (Forest Research). Scion provided \$4000 for this study

10) Advantages of inclined steel screws in timber. This study has just begun, as a result of visiting the University of Karlsruhe timber research centre in Southern Germany. Their joint testing program was showing excellent results and we are in the process of doing similar joint testing at the UoA. All materials for the testing, to date, have been supplied by industry free of charge are we are hopeful that our initial results will lead to their financial assistance in the future.

11) I am a member of a collaborative team of academics, externally funded by Carter Holt Harvey, to develop soundproof timber floors with respect to impact. This project is ongoing and the research is succeeding in producing sound proof timber floors. Financial assistance for this project by the Australian Government 'Forest and Wood Research and Development Corporation' is just under \$1 million.

PUBLISHED PAPERS, 2006 to 2010:

CHAPMAN, J.B. Cross laminated timber construction for resisting lateral loads on six level buildings. *Journal of the New Zealand Timber Design Society, volume 18, issue 4, 2010, p3-9*

Chapman, John., Investigating the Use of Softwood Poles for 'Massive' Elements in Timber Commercial Buildings. *Sustainable Architecture and Urban Development Conference, Jordan, July, 2010*

Walford, G. B., & Chapman, J. B. (2010). Evaluation of the strength of shaved steamed *Pinus radiata* poles. *New Zealand Journal of Forestry Science, 40, 83-90.*

Chapman, John., Dodd, Dr George 'Acoustic testing of a pinus radiata pole joists system', *Journal of the New Zealand Timber Design Society, volume 18, issue 1, 2010, p13-18*

Chapman, John., Dodd, Dr George 'Improved sound insulated floors for a 6 storey timber building system', *New Zealand Acoustics, volume 22, 2009 / #4, pp20 - 26*

TONKS, Garrick, Dr., CHAPMAN, John, Mr, 'Earthquake Performance of Historic Timber Buildings in New Zealand', *Journal of the New Zealand Timber Design Society, volume 17, issue 3, 2009, p3-9*

CHAPMAN, J.B. '2008 Timber Technology Course, University of Auckland', *Journal of the New Zealand Timber Design Society, volume 17, 2009, issue 2, p21-22*

CHAPMAN, J.B. Timber Pole use in New Zealand, past and future.' *International Symposium Timber Structures from Antiquity to the Present, Istanbul, Turkey, 25-27 June, 2009.*

CHAPMAN, J.B., DODD, G. 'Improved sound insulating floors for a proposed demountable timber building system to 6 storeys.', *10th World Conference on Timber Engineering, Miyazaki, Japan, June 2-5, 2008, 2008*

CHAPMAN, J.B., DODD, G. 'Can pinus radiata pole floor beams and joists make useful floors for multi-storey building?', *Australia and New Zealand Architectural Science Association Conference 2007, Richard Tucker, James Coulson(ed.), ANZASCA 2007, Melbourne, Australia, 14-16 November 2007, 2007*

CHAPMAN, J.B. 'Historic timber structures in New Zealand - restoration works and lessons for the future.', *Structural Analysis of Historic Constructions SAHC 2006, Delhi, India, 6 - 8 November, 2006*