

Personal Details:

Name: Professor Timothy J McCarthy BE (Cork) MSc (Cranfield) PhD (Cork), MIEI

Employment: Professor, Structural Steel and Design
School of Civil, Mining and Environmental Engineering
Faculty of Engineering, University of Wollongong

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Email: tim_mccarthy@uow.edu.au

Date of appointment at University of Wollongong: December 2004

Previous position 1985-2004: Senior Lecturer, University of Manchester, UK

Citizenship: Australian and Irish Date of birth: 2nd December 2009

Biography

Professor McCarthy holds a Bachelor and PhD degree in Civil Engineering and a Masters in Offshore Structures. Having worked in Ireland, France, UK (for 19 years) and California he was appointed to the Chair of Structural Steel and Design at UOW in 2004. His research in Australia has concentrated on Ecologically Sustainable Structural Design, improving the carbon footprint of construction materials and embedding social responsibility in the Engineering curriculum. As one of 5 members of the Joint Regional Planning Panel for Wollongong, NSW he determines planning applications for projects valued between \$10m-\$150m and projects in environmentally sensitive coastal zones. This includes major residential developments of 250 or more new dwellings. Professor McCarthy is a Member of the Institution of Engineers of Ireland.

Other appointments:

2011-present Editorial Board of University of Wollongong Press

2009-present Member of NSW Joint Regional Planning Panel for Wollongong

2009-present Member of Technical Committee PP20 Environmental Performance of Building Products in Australia, National Standard NS12000

2009- 2011 Australian Learning and Teaching Council, Grants and Citations assessor.

2009 Engineers Australia, Accreditation Panel Member.

2008-present: Chair of Teaching Facilities Subcommittee of University Education Committee, University of Wollongong.

2008-present: Board Member and Chair of School Building Committee, Edmund Rice College, Wollongong.

2007-present: Member of Board of Directors of National Centre for Appropriate Technology (NCAT - Futureworld), Lake Illawarra, Warrawong.

My Current Research Areas:

- Sustainable Structural Design and Planning
- Systems thinking in Construction engineering
- Structural engineering (onshore and offshore)
- Artificial Intelligence in Structural Optimisation
- Engineering education

My Current Teaching Areas:

- Structural Design (Steel, Reinforced Concrete and Pre-stressed Concrete)
- Mechanics of Solids,
- Foundations of Engineering
- Computer aided drafting and 3D modelling and BIM

What I can help with:

- Ecologically Sustainable Structural Design and planning
- Design of steel structures
- Conceptual design and Integrated design systems
- Urban Planning
- Performance based multi-criterion optimization
- Offshore structural engineering and wave energy research
- Applications of artificial intelligence in structural design
- Validation, qualification and commissioning of pharmaceutical facilities

Selected Publications:

'Encapsulating sustainability principles for structural design of buildings' TJ McCarthy, NM Sheikh, A Gardner, Paper 383 25th International Conference on Passive and Low Energy Architecture, PLEA2008, October 22-24, Dublin 2008

'Sustainable Structural Design: Conceptual Design of Adaptable Commercial Buildings' Australian E Kelly and T J McCarthy, Paper 61 ASEC2008, Melbourne June 2008

'Influence of Joint Stiffness on the Free Vibrations of a Marine Riser Conveying Fluid', S Kaewunruen, T McCarthy, J Leklong, S Chucheeprakul, Proceedings of the Eighth (2008) ISOPE Pacific/Asia Offshore Mechanics Symposium Bangkok, Thailand, November 10-14, 2008, pp113-120 ISBN 978-1-880653-52-4

'Improving Learning in Engineering Mechanics: The Significance of Understanding' T Goldfinch AL Carew, TJ McCarthy, 19th Annual Conference of Australasian Association for Engineering Education AAEE2008 Yeppoon December 8-10, 2008

'Yield Curvature for Seismic Design of Circular Reinforced Concrete Columns' MD Sheikh. TJ McCarthy, *Magazine of Concrete research*, Vol 62 (10), 741-748 2010

'Rational Revalidation' H Aleem, Tim McCarthy, R Edwards *Journal of Validation Technology* Spring 2010 Vol 16 No2 ISSN: 1079-6630 – Awarded best paper for 2010 by Institute of Validation Technology, USA

'AutoCAD Express NT', Tim McCarthy Springer Verlag, London 1999 (ISBN 3540761551) 293 pages

Selected Awards and Project grants:

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| 2010-2011 | ALTC Priority Project PP10-1778 Exploring Inter Cultural Competency in Engineering \$149k ALTC T Goldfinch, T McCarthy Catherine Layton Principal CIs, Partners QUT, UTS, UTas |
| 2010-2011 | ALTC Competitive Grant CG10-1586 \$211k ALTC G Prusty CI UNSW Lead, Partners University of Wollongong T McCarthy, UTS, Utas, RMIT, Uni Melb |
| 2010 | ESDF Grant UoW \$10k Addressing Gaps in Graduate Attributes in the Engineering Curriculum. |
| 2010 | Australian Learning and Teaching Council Citation for Outstanding Contribution to Engineering Education. |
| 2010 | Member of RRSB team that won \$25million Federal Govt grant for building the Sustainable Building Research Centre at the Innovation Campus |
| 2008-2010 | ALTC Competitive Grant CG-695 \$150k ALTC plus \$100k University contributions: A Pro-Active Approach to Addressing Student Learning |

- Diversity in Engineering Mechanics T McCarthy Principal CI, with CI's Dr A Carew, Dr G Thomas, Dr Alan Henderson UTas and Ms A Gardner, UTS.
- 2008 ESDF Grant: A Multi-Institution Approach to Predicting and Addressing Student Performance in Fundamental Engineering Mechanics, **\$17200** from UoW plus additional contributions from UTS and UTas
- 2008-2011 Amog Consulting: PhD studentship on optimization of mooring designs for floating offshore oil and gas facilities. **\$60k**
- 2006 Carrick Institute Australia: Graduate Meta Attributes and Systems Thinking in Engineering Education **\$134000** with Dr A Carew Principal CI, A/Prof P Cooper and A/Prof S Nightingale.
- 2006 Teaching & Learning Fund: Development of Collaborative Learning Spaces, **\$67000**
- 2005 CREAM: Advanced materials in fibre reinforced concrete **\$10000**
URC Start up grant, Optimisation of Risers **\$13700**